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UNDER THE EDITORSHIP OF

Edgar S. Furniss

*Professor of Political Science and Dean  
of the Graduate School, Yale University*

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*An Introduction to*

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# Economics

BY H. LARUE FRAIN, PH. D. \*\*\*

*Department of Economics \* University of Pennsylvania*

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*Houghton Mifflin Company*

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## EDITOR'S INTRODUCTION

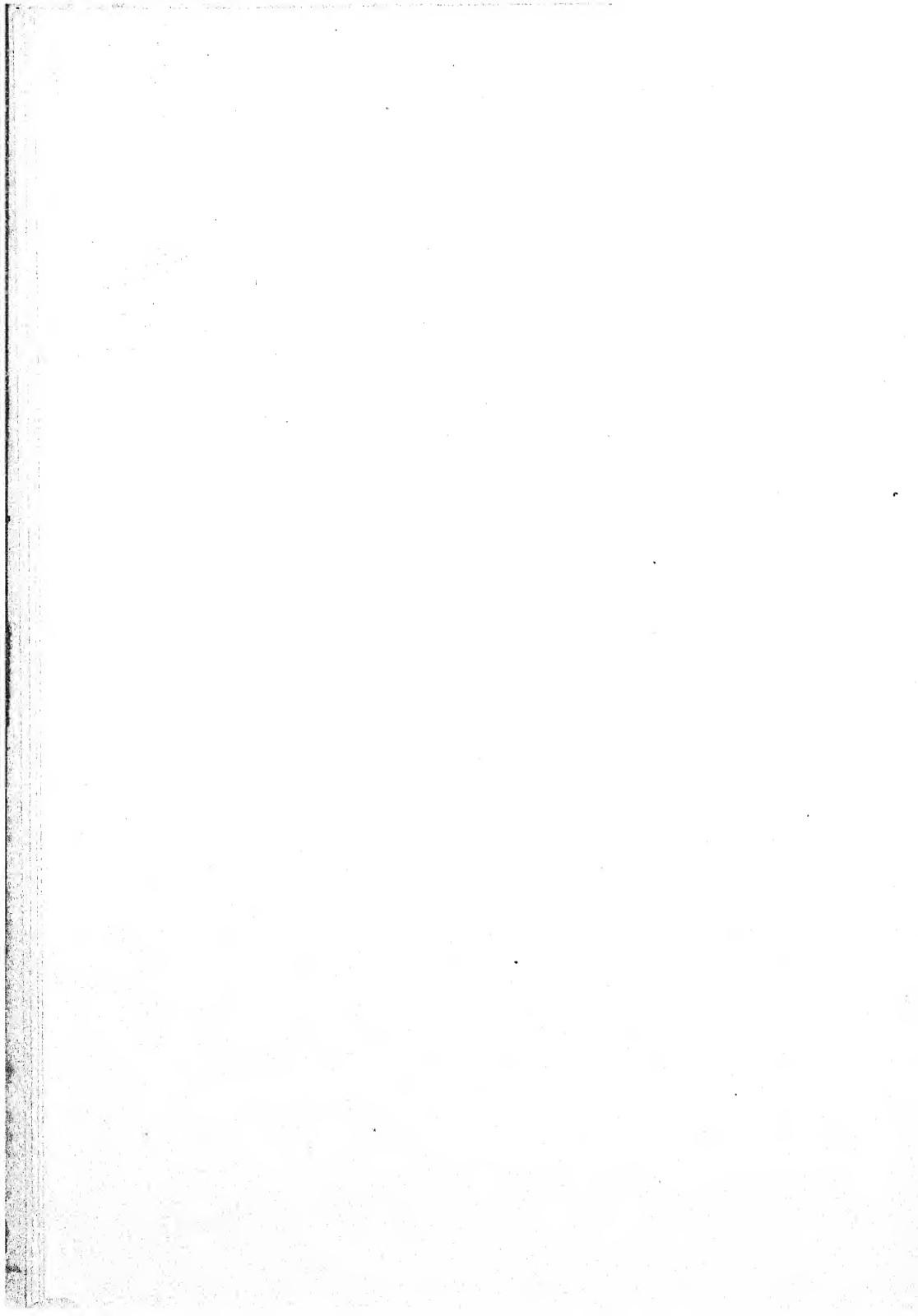


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EACHERS of elementary economics have long felt the need of a text-book which combines a thorough grasp of economic principles with a realistic treatment of the organization and processes of the modern business world. Doctor Frain has written such a book and I am sure it will receive immediate recognition as an important contribution to our teaching materials in this subject.

As the author explains in his Preface, *An Introduction to Economics* is designed especially for students whose primary interest is in what is known as "applied economics." The book should serve the needs of these students admirably. It has, however, a much wider usefulness, for it will be found serviceable in the liberal arts colleges as well as in educational programs designed to train students for practical vocations in the business world. Doctor Frain displays an accurate understanding of economic theory. His treatment of this difficult subject is lucid and is enlivened by a wealth of interesting illustration. The statement and exposition of economic principles will withstand criticism from those whose chief interest lies in the theoretical branches of the subject. The correlation of theory with business practice and organization makes the book serviceable to students of quite varied type.

E. S. FURNISS



## PREFACE



**I**N WRITING *An Introduction to Economics* the author has had in mind the students in his classes in the School of Accounts and Finance of the University of Pennsylvania. Some of these students have had no work in general economics; most of them will take at most only this introductory course followed by a course in problems. They expect to encounter economic phenomena by way of concrete situations and they are interested primarily in a better understanding of the economic forces and circumstances with which they have already had some contact and which they will meet with increasing frequency in the course of their employment.

For such students neither the traditional presentation of economic principles nor the customary presentation of institutional economics has been found satisfactory. The former relies heavily on abstract reasoning, on logical unity within a certain framework of assumptions, and places an unrealistic emphasis on the automatic establishment of economic balances. The latter, on the other hand, tends to place so much emphasis on the dynamic aspects of economic life as to create the impression that there are no broad generalizations which are helpful in explaining and understanding the operation of the economic system. The *Introduction to Economics* employs both approaches, not in an effort to contribute original explanations nor to develop logical unity for the presentation as a whole, but to help students to comprehend more fully the economic system as they may encounter it in daily life. The book attempts also to stimulate a critical attitude on the part of the students toward the operation of that system. The inevitability of change is stressed as is the necessity for meeting new conditions in new ways which are likely to place increasing emphasis on social as

against individual interests and on human as against property interests.

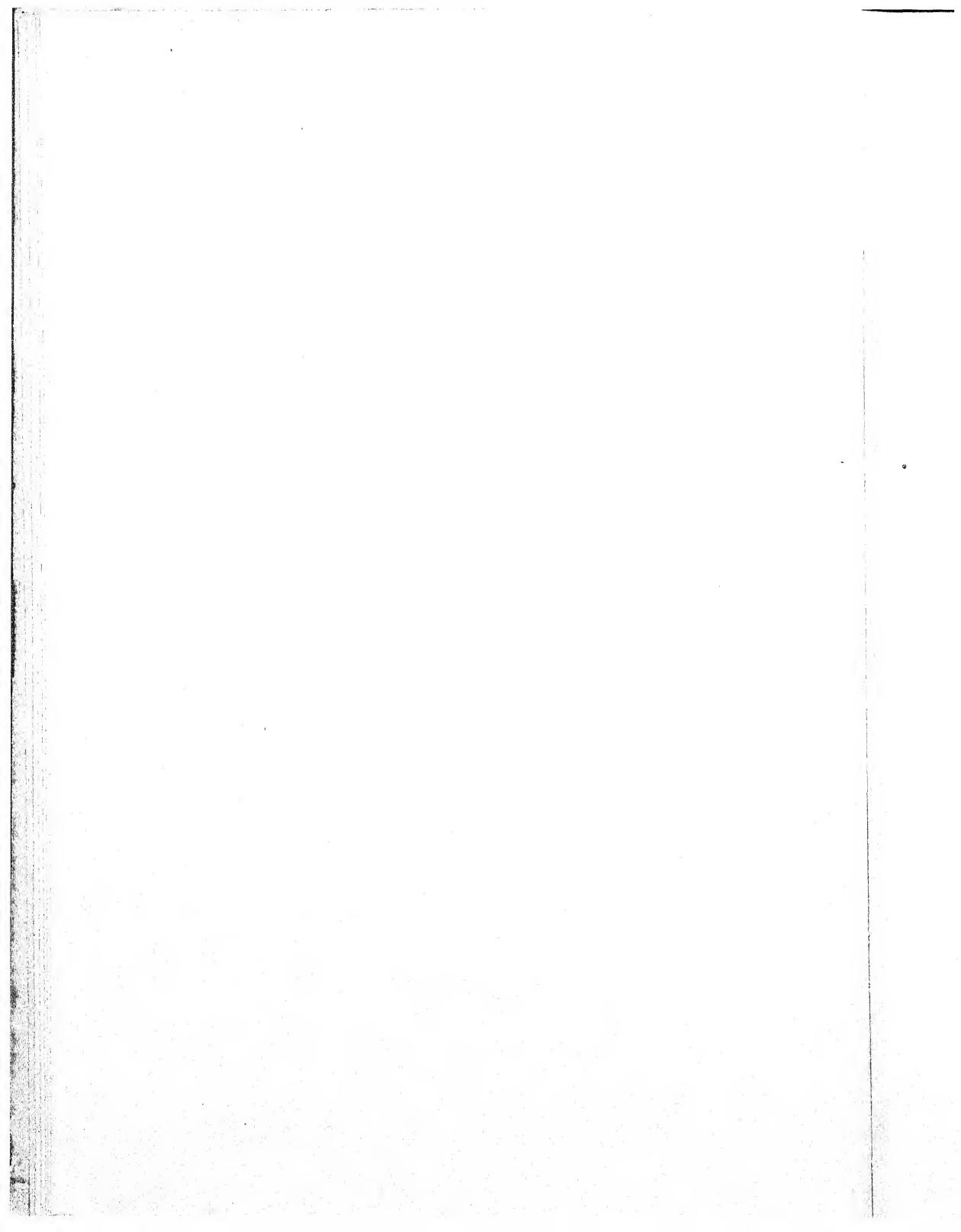
In this introduction to economics the presentation is simplified; abstract concepts and reasoning are avoided wherever possible; concrete illustrations have been used extensively, the existence of defects and maladjustments in the prevailing economic system are noted from time to time, and probable lines of development are indicated in some instances; and occasionally historical perspective is furnished as a means to fuller appreciation of the reasons for existing conditions. While there will be differences of opinion as to the wisdom of omitting some topics and including others, of treating certain subjects in one connection rather than in another, of extensive emphasis on some and meager stress on other points, the selection and organization of material reflects diverse considerations some of which are more or less peculiar to the group of students for which the text has been prepared. Frequent references to points made in preceding chapters are intended partly to impress the student with the interrelation of economic phenomena and partly to provide a basis for incidental review of preceding assignments. Individual chapters are so organized that students can readily prepare brief outlines which, by showing the internal coordination of the chapter, will both indicate the unity of the chapter and serve for quick review prior to class sessions or examinations.

Whatever merit the text may possess reflects the influence of stimulating discussions with various groups, including evening and graduate classes, business executives, labor leaders, and members of the Wharton School faculty, especially those in the Economics Department. I am deeply indebted to my colleague Professor William N. Loucks who gave liberally of his time in reading the entire manuscript and in making many helpful suggestions. Other colleagues to whom my appreciation is specifically extended for criticisms of particular chapters are

Professors Ralph A. Young and Karl Scholz. The generous cooperation of my associates does not commit them to endorsement of views expressed, explanations offered or conclusions reached. Responsibility for sins of both omission and commission is mine alone. My appreciation is also extended to Alice F. Barber for assistance in many ways, including typing the manuscript, preparing many of the charts and caring for numerous details. To my wife, Mary D. Frain, I am indebted for suggestions, assistance in proof-reading and extreme patience with many inconveniences while the manuscript was in course of preparation.

H. L. F.

WHARTON SCHOOL  
UNIVERSITY OF PENNSYLVANIA



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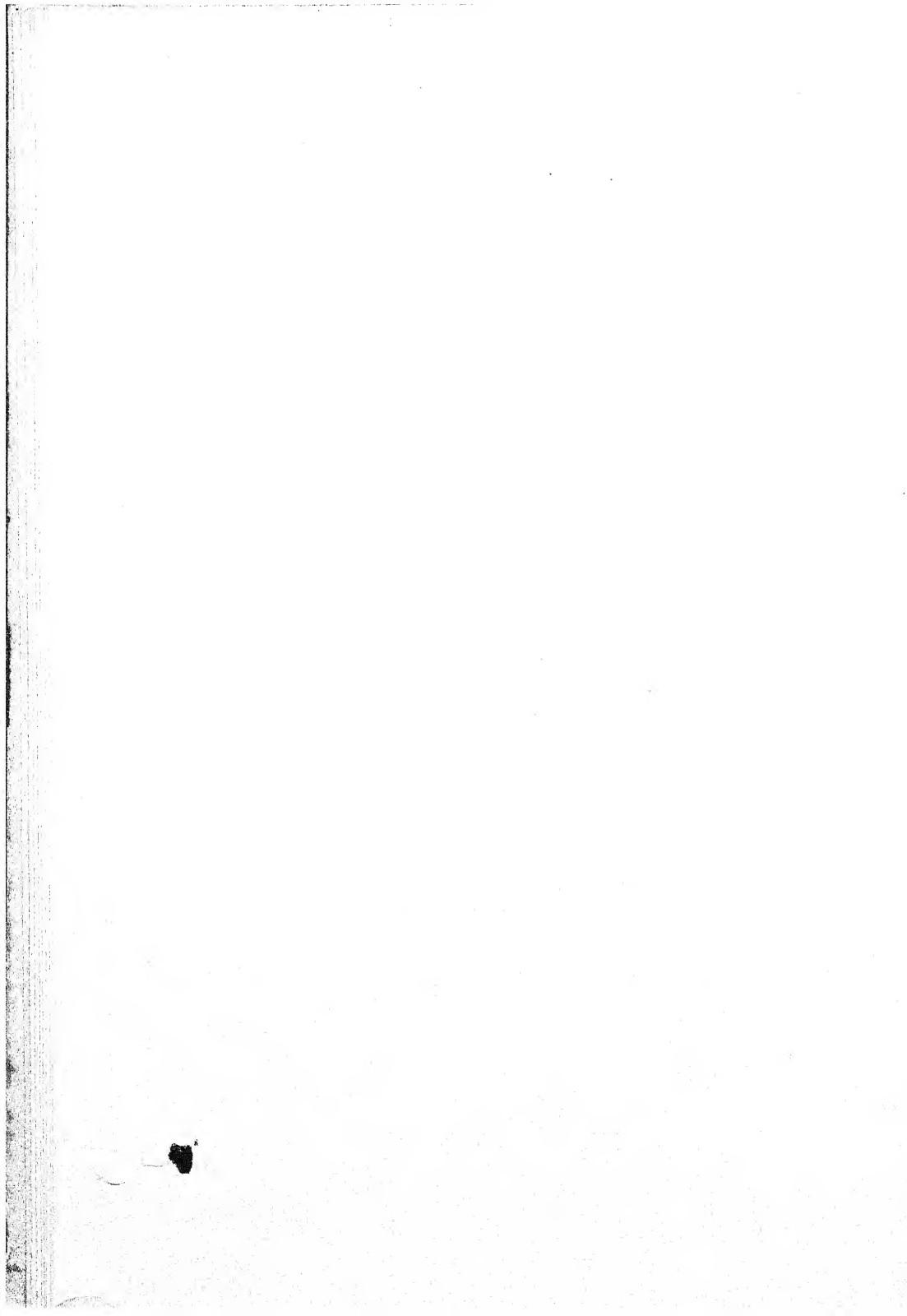
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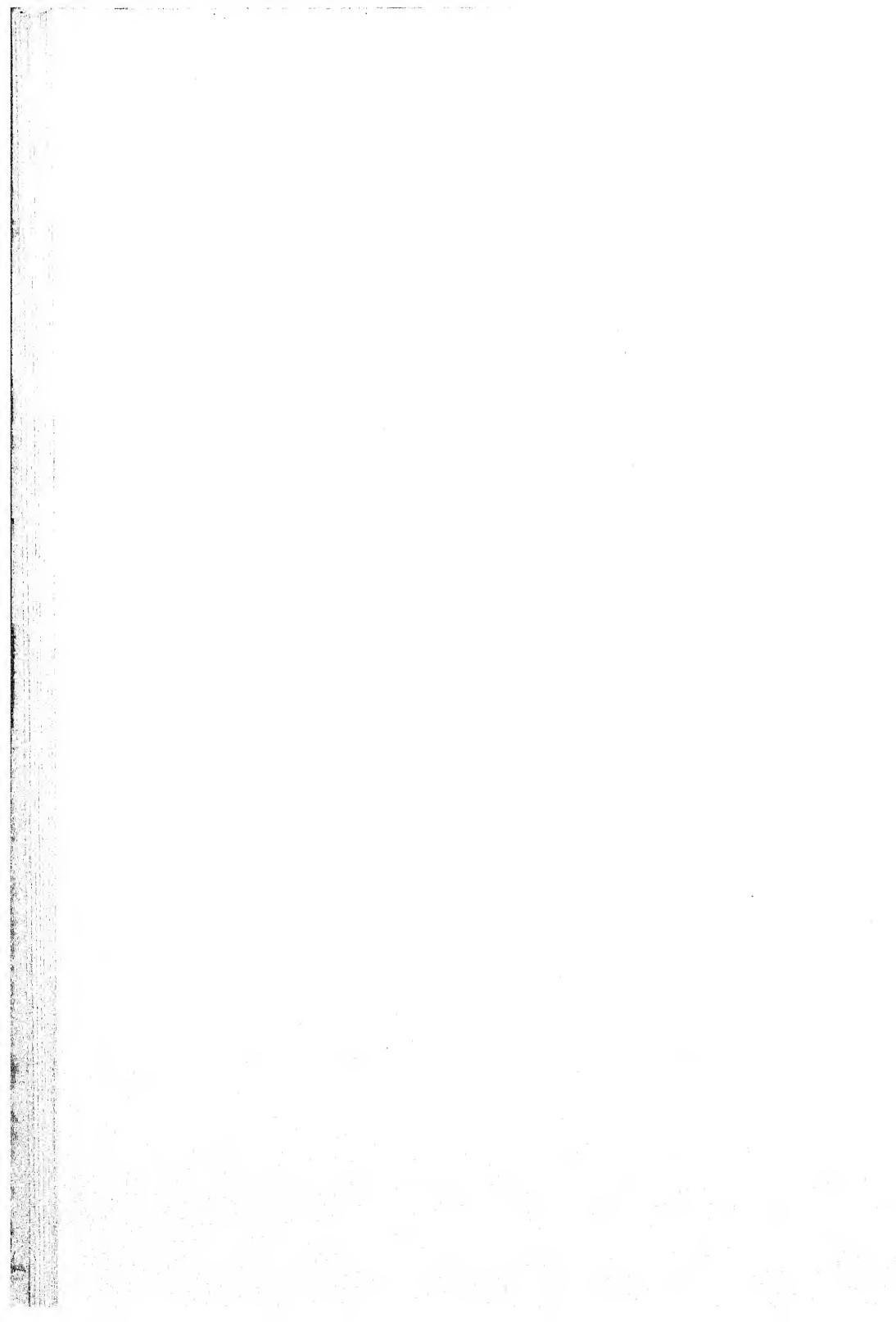
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PART ONE

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*Organization and  
Purpose of Business*

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## CHAPTER I

### PRIVATE AND GOVERNMENTAL ENTERPRISES

ACCORDING to Biblical lore man has had to obtain his bread by the sweat of his brow since he was driven from the Garden of Eden. However literally one accepts this version of man's start on his journey of toil, it is obviously true that in most countries man has for centuries had to work to obtain his living. His activities have been many and varied as he struggled with nature for even the basic necessities of life. He has been both a beast of burden and the monarch of great political and industrial empires, and in the course of time there has developed through his activities a complex assortment of business enterprises.

These business activities by which man makes his living may be directed in either of two major ways. Individuals may direct their own activity as they see fit, or their activities may be subject to the direction of a central authority. This central authority may be chosen by the people, or it may be forced upon them. It may be a single individual, such as an absolute monarch or dictator, or it may be a group of individuals which forms a governing council. The purpose of the control may be to benefit the people as a whole, or merely to exploit the masses for the benefit of the ruling group. In any event, the central authority, usually the government, decides how business activities shall be conducted.

This central authority may adopt any of several policies with respect to business activity. Individuals may be given virtually free rein in organizing and directing their own activities and those of the persons voluntarily associated with them. This is generally known as private enterprise. Or the government itself may engage in conducting business activities in so far as it sees fit. In this case there is governmental enter-

## 4 PRIVATE AND GOVERNMENTAL ENTERPRISES

prise either in general or in particular kinds of business. Or the governmental policy toward business may be that of making rules from time to time as conditions require and allowing individuals economic freedom within the limits set by the rules. Such a policy is known as private enterprise with government regulation; it will be considered in a later chapter.

### I. PRIVATE ENTERPRISE

#### A. LAISSEZ FAIRE AS A GOVERNMENTAL POLICY

In this country the traditional policy of the government has been to rely upon the initiative of individuals to carry on productive activity. This policy has been known as *laissez faire* or "let alone." Under it the government itself refrained from engaging in business and did not attempt either to determine or furnish what the population needed or wanted. Individuals were free to decide, as consumers, what they wanted and, as producers, what was to be furnished and how. Trade was carried on between individuals on the basis of voluntary contracts. Such a policy of economic freedom stimulated "rugged individualism."

While the original adoption of the *laissez-faire* policy was encouraged by the unfavorable reaction to British interference with Colonial trade, the policy itself rested on certain definite assumptions as to the interests of individuals and of society as a whole. On the basis of these assumptions the policy was expected to weave the self-interest of individuals into a fabric of mutual benefit.

*Knowledge of Self-Interest.* The first assumption was that each mature person knew his own needs, desires, abilities, and interests better than anyone else. Therefore he, as producer or as consumer, was best able to decide what would be most advantageous to him. It was recognized that as consumers most individuals want more than their incomes will buy. Since all their wants cannot be satisfied, there must be a choice, and it was thought that each individual could decide for himself how his income should be spent to his own greatest advan-

tage. It was felt, moreover, that individuals, as producers, knew their own abilities better than anyone else and could best decide the kind of work for which they were best qualified and in which they would be most successful.

*Attainment of Self-Interest.* Not only was it assumed that individuals knew their own interests best, but also that they knew how to attain them. If an individual decided he wanted a pair of shoes, he was supposed to know whether it would be more advantageous to make them himself or to buy them. If he wanted to buy them, then he could decide better than anyone else the kind and quality which suited his purpose and also the reasonableness of the price. Thus, as a consumer, he knew how to get the most for his money. As a producer, he knew best how to conduct his own affairs. He knew how much capital to use and how much labor to employ; whether it would be advantageous for him to pay high or low wages and to work his employees long or short hours; whether he would gain more by selling on credit or only for cash; whether he would acquire more by charging high or low prices.

*Harmony of Interests.* Finally, according to the *laissez-faire* policy, it was assumed that individuals would be compelled, through their own self-interest, to do the things which best served society. Those who served best were expected to profit most. Producers could not compel consumers to buy from them. Consumers must be won by being furnished the things they wanted at prices that would attract them. Only by such service to the public could producers hope to derive profits and benefit from their activity. As they improved their service, their business would increase and their profits would grow. Thus service and profits were presumably tied together. Consumers, in seeking the most for their money, not only served themselves but society likewise, for by insisting upon high quality and low prices they directed business away from high cost and inefficient producers to low cost and efficient ones.

In short, under a policy of *laissez faire*, it was expected that the self-interest of producers and consumers would automatically guide business activity into both profitable and

## 6 PRIVATE AND GOVERNMENTAL ENTERPRISES

serviceable channels. Activities which were individually profitable would be socially advantageous, and those which were socially disadvantageous would be individually unprofitable. Thus the interests of individuals and of society as a whole were identified.

### B. TRADITIONAL CHARACTERISTICS OF PRIVATE BUSINESS

*Freedom to Engage in Business.* A *laissez-faire* policy based on self-interest gave an individual a high degree of freedom in deciding how he would make his living. He was not compelled to engage in business. He might choose to be relatively independent of the rest of the world and furnish necessities such as food, clothing, and shelter for himself by his own efforts — with perhaps the assistance of his family. If he elected this course, there was free land which he could use in farming as a pioneer. On the other hand, if he decided to cooperate with others, either as a proprietor or as an employee, his activities were woven into the fabric called business. But here, also, he was free to engage in virtually any activity. If he wanted to operate a stagecoach he needed no special governmental permission in the form of a franchise or a "certificate of public necessity"; if he wanted to operate a brewery or a distillery he needed no government license; if he wanted to be a lawyer or a doctor there were no state board examinations to be passed before he could start his practice.

*Private Ownership of Productive Wealth.* Productive wealth is needed to start and conduct many forms of business. Such wealth does not include personal possessions which individuals need to gratify their wants directly, such as clothing or furniture. Rather, it includes the material things necessary for further production, such as land with its mineral resources, factories, stores, warehouses, tools, locomotives, and other types of equipment.

Private ownership of wealth was permitted in order to increase productive capacity. At the time that the *laissez-faire* policy was adopted there was an abundance of undeveloped land and a shortage of tools and equipment to assist individuals in

producing the things they needed for their material comfort. As land was plentiful, it was thought that individuals would voluntarily develop it, that they would raise crops and cattle on it, and build houses and barns. There was then no realization of the vast mineral resources lying below the surface which would come into the possession of those who might own the land at the time discovery of them was made. The incentive produced by ownership was also expected to prompt individuals to increase the supply of man-made capital. This assumption called for the conclusion that producers would be encouraged to make tools, devise machinery, build bridges, erect and equip factories, dig canals, and harness winds and streams for power. Even if individuals did not use their wealth personally, it was expected that their ownership would assure the productive use of the wealth by others, as would be the case when the owner of land leases it to a tenant for cultivation. In this manner private ownership of natural resources and other forms of productive wealth were expected to increase the productive capacity of the nation.

*Private Operation of Enterprises.* At the time of the adoption of the *laissez-faire* principle there was no important distinction between ownership of business and its operation. Individuals customarily used their own services and productive wealth in their enterprises. Frequently individuals had insufficient funds of their own to engage in business or had need of additional funds for an extension of their business. Under such circumstances they borrowed or leased additional capital; but when this occurred it was generally true that the proprietor of the business had a sufficient share in it to use the borrowed funds as though they were his own and to repay them as promptly as earnings permitted. There was no tendency for enterprises to have heavy and perpetual bonded indebtedness.

In the operation or management of an enterprise the individual had extensive freedom. The operator of a coal mine, for example, could decide how much or how little coal would be produced at his mine, and he could sell the product for as much

## 8 PRIVATE AND GOVERNMENTAL ENTERPRISES

as he could get or for as little as he was willing to accept. He could hire, discharge, promote, and demote workers at will. He could determine the hours and other conditions of work and could pay as little as was necessary to workers. He could install new machinery according to his own judgment, and he had no obligations toward displaced employees.

*Unrestricted Profits.* While individuals might be free to engage in business, own productive wealth, and manage enterprises, the mere freedom itself would not induce them to do so. The incentive or driving force came through the expectation of private profits. When persons supplied their own needs directly the benefit came mainly in the form of abundant production. In farming the desired profit would be a plentiful harvest. But specialization in some form of business activity was undertaken in the hope of money profits. Both merchant and manufacturer expected to sell their goods or products for more than the total expense of producing or marketing them.

Under this system profits were somewhat similar to prizes in that they might or might not be received, ventures being undertaken with the realization that losses might take the place of profits. Nevertheless in this quest for gain no limit was imposed on the amount individuals might receive. When profits were possible the producer could take them without limit. So great was this freedom that the buyer had to be on his guard. Hence the legal doctrine of *caveat emptor* — "let the buyer beware."

*Unrestricted Competition.* The producer's freedom and incentive were both subject to the automatic control of competition, from which came the reward of success and the penalty of failure. Freedom to engage in business carried with it freedom to lose as well as to gain, with competition as the controlling factor which would prevent one party from taking advantage of another. For example, the competition among producers for the consumer's dollar safeguarded the consumer from exorbitant prices and poor quality of merchandise, and the competition among consumers for the goods of producers protected the producers from unreasonable demands and in-

adequate prices. Similarly, competition among employers of labor was to safeguard workers from unreasonably low wages, while competition among workers for jobs was to safeguard employers from excessively high wages. Again, competition of lenders for the use of their funds safeguarded the borrowers from excessive charges, while competition of borrowers for funds protected the lenders. Thus competition was relied upon to assure an automatic control of the terms of trade.

No limits were actually placed on the forms this competition might take, nor on the extent to which it might go. Any waste or damage it might cause was considered the inevitable consequence of trial and error. The possible ruthlessness of the effects caused by competition made it particularly effective as a means of control. Presumably this interaction of conflicting ends assured the survival of only the fittest in the economic struggle.

### C. CHANGING BUSINESS CONDITIONS

Modifications in the general policy of *laissez faire* began almost as soon as it was adopted, continuing gradually until recent years when the rate of change increased. To understand this growing modification of *laissez faire* one must realize the alterations which have been occurring in the conditions under which private business operates.

*Productive Capacity.* In the earlier days individuals were concerned mainly with obtaining the necessities of life. There were vast areas of land to be explored and developed but very little mechanical equipment with which to work. Production was restricted by the fact that individuals had to rely mainly upon themselves and their animals for power. Under these conditions there was real need for "rugged individualism." Today, however, the land has been brought under cultivation, mineral resources discovered and exploited, machinery developed, and mechanical power substituted for human labor. Under these conditions individuals are no longer faced with the problem of how to obtain productive capacity; rather they must know how best to use the tremendous existing facilities for the

## 10 PRIVATE AND GOVERNMENTAL ENTERPRISES

common good. This new situation calls for less individualism and more central planning and coordination.

*Size of Enterprises.* Another condition which has changed materially is the size of enterprises. Not only did some giant enterprises develop in virtually all types of business, but the predominating size of enterprises has been increasing. This shift from smaller to larger units has been more pronounced in some industries than in others, being less noticeable in agriculture and more prominent in railroad transportation.

As a consequence of the increased size of enterprises the individual has less opportunity to engage in business for himself. In earlier days one who did not like the terms and conditions of employment offered him was not bound to remain an employee. As soon as he had some savings and experience he could begin business for himself. If even a laborer desired to engage in farming, he could save enough in a year to purchase a tract of Western land, and at one time the government offered free land to those who would cultivate it. But under existing conditions the opportunity for individuals to establish their own enterprises has diminished almost to the vanishing point. There is no more unclaimed land which can be farmed advantageously, and the large investments required in most types of business exceed the financial resources of most individuals. Moreover, the technical knowledge and experience now required for successful operation of an enterprise prevents many individuals from beginning on a small scale. Such circumstances force most of the working population to find employment within the existing business structure.

With the passing of opportunities for the individual to engage in business, a new responsibility is placed upon those in control of existing enterprises, especially of giant organizations. Business can no longer be conducted with consideration only for profits to owners and management; they must also furnish adequate opportunities for employment under conditions which protect the health, safety, and earning power of the workers.

*Impersonal Ownership.* With the increasingly large size of enterprises has come a change in the nature of their ownership.

A century ago the carpenter owned his own tools; the farmer owned the land that he cultivated; the storekeeper owned his store and stock of goods; the manufacturer owned his factory and its equipment. As a rule, private ownership meant personal possession, and hence control of productive wealth itself. As business expanded more capital was required than an individual could supply alone, so that assistance was obtained by associating with others, frequently by forming a corporation. It was the corporation then which owned the land, buildings, machinery, and other wealth actually used in production. The individuals owned merely shares of stock in the corporation. Today private ownership is not mainly personal possession, and hence individual control of productive wealth, but rather impersonal possession of that wealth by corporations.

*Separation of Management from Ownership.* Along with the growing impersonal ownership of productive wealth has come a separation of ownership and management. As business units became larger it became increasingly difficult for a single individual to manage them efficiently. More and more authority was delegated to employees and associates. With the advent of corporations a much greater separation developed between ownership and operation, with the result that at the present time individuals frequently manage corporate enterprises in which they have little or no financial interest. In 1929 the combined holdings of all the directors of the Pennsylvania Railroad Company were probably less than  $7/10$  of 1 per cent of the stock. Such separation of power and authority on the one hand, and of responsibilities on the other, was not contemplated when the government adopted its *laissez-faire* policy, and that policy furnishes no adequate means of coordinating authority and responsibility under these circumstances.

*Growth of Monopolies.* Closely related to increased size in most cases has been the growth of monopolies, a growth which has been partly deliberate and partly unintentional. As concerns become larger than their competitors there is an inevitable increase in the influence which they exercise on the market, and not infrequently large enterprises have been created for the

definite purpose of stifling competition. Whatever the circumstances may be, the traditional policy of *laissez faire* never anticipated that a single enterprise would be sufficiently large to dominate an industry as does the International Paper Company which, "as the largest producer of news print, dominates the price situation, since it has been the custom for years for all other manufacturers to conform to the prices set by the major producer."<sup>1</sup>

Monopolies are not solely dependent upon the size of enterprises. They also arise through public grants in the form of patents, copyrights, and franchises. As these grants become increasingly important they exert a dominating influence which cannot be handled satisfactorily under the traditional policy of *laissez faire*.

*Prosperity Dependent on Market Conditions.* When individuals cease producing primarily for their own consumption and direct their efforts toward producing for sale particular articles in large quantities, then their prosperity depends not only on their own activities, but also upon conditions in the market, which is another way of saying that their prosperity is dependent on the activities of others. If an individual undertakes to produce hats, he plans to sell them in the market. The price he can get depends on the desires and purchasing power of customers on the one hand and the quantity of hats he and his competitors make available on the other. In the making of hats he incurs costs of production, which are determined largely by market conditions for labor, materials, and equipment. The quantity of the supplies required by himself and his competitors together with the total available quantity of them will determine their costs. But it must be borne in mind that the prosperity of the hat manufacturer does not depend entirely upon the income he receives for his services as a manufacturer. The commodities and services he buys for his personal consumption and that of his family are also to be considered. Here again prices are determined by market conditions over which he does not exert any more notable influence

<sup>1</sup> *New York Times*, September 23, 1932.

than over the cost of supplies for the manufacture of his product.

This dependence of individuals and groups of individuals upon one another is not new; the prosperity of those who specialize has always depended upon the activities of others. The new aspect arises from the extent to which specialization has been carried and hence the extent to which prosperity has come to depend upon market conditions. Under such circumstances the prosperity of both individuals and society in general requires more deliberate planning and coordination of business activity than when a *laissez-faire* policy was adopted.

In short, the changed conditions under which business is conducted have made obsolete the traditional policy of *laissez faire*, which was admirably suited to developing rich unexplored resources and general productive capacity. Once the foundation had been established, a different governmental policy was needed for adequate utilization of resources, since utilization under modern conditions calls for larger and more complex business activity than can be satisfactorily self-directed. The devices of private endeavor can no longer be relied upon to direct business activities so as to benefit society as a whole.

Even staunch advocates of private enterprises suggest that this traditional policy is no longer satisfactory. For example, Mr. Harriman, when President of the United States Chamber of Commerce, remarked in June, 1933:

The American people have finally become convinced that the *laissez-faire* economy, which worked admirably in earlier and simpler industrial life, must be replaced by a philosophy of planned national economy.

In this country the future governmental policy toward business is uncertain. Some individuals advocate continuing a general policy of business freedom but subjecting it to increasing regulation and control as conditions require. Others believe this policy entirely incapable of meeting modern conditions and advocate the substitution of governmental enterprises for private ones. We are not concerned here with the

merits of these proposals, our only interest in them being that they are methods by which business activity may be conducted. It will be convenient to consider governmental regulation in another connection and to turn immediately to governmental undertakings which are similar to those of private enterprises.

## II. GOVERNMENTAL ENTERPRISES

Governmental agencies, federal, state, and local, engage in a variety of business activities. Some of these are regulatory in nature as, for example, the Interstate Commerce Commission and the Federal Trade Commission. There are also many activities which are strikingly similar to those of private enterprises. It is with these that we are here concerned.

### A. MONOPOLISTIC ENTERPRISES

Even under the traditional policy of *laissez faire*, individuals were not permitted to engage in all lines of useful activity, some enterprises being reserved for exclusive performance by the government. The outstanding government monopolies which directly serve the public in this country are so universally accepted that many people do not realize that they are monopolies. One is the United States mail service, which was inaugurated shortly after the establishment of the Constitution. In performing it the government engages in substantially the same kind of activity as would be necessary if the business were privately conducted: owning buildings and equipment; employing labor of different kinds and grades; planning and supervising the collection and distribution of mail; and providing for the printing of stamps, which are a type of receipt for advance payment of service. Another monopoly is the printing and coining of money. This might be done privately under the direction of the government, as in some foreign countries. However, in this country it has been deemed advisable for this service to be performed by the government, which also coins money for the foreign states of Honduras, Cuba, Ecuador, and Colombia. A federal monopoly of somewhat different char-

acter occurs in the case of the Panama Canal, a project owned and operated by the government. In this case the monopoly is not one based on authority, but on other circumstances. Private enterprises are not forbidden to construct and operate another canal, although competition is avoided by the physical and financial difficulties which would be encountered in constructing another one.

Not infrequently cities and towns have municipally owned and operated waterworks, gasworks, electric plants, sewage disposal plants, and transportation facilities. An instance of this is the construction and operation of the Holland Tunnel under the Hudson River by the Port of New York Authority.

In this country government monopolies are less prominent than abroad. They reach their extreme in Russia where a governmental policy opposite to that in the United States is followed, for in Russia government monopolies are the rule and private undertakings the exception. In most countries there are some monopolies in kinds of business which are privately operated in the United States, as radio broadcasting in England, railroad operation in Germany, and the control of telegraph systems in a number of countries.

#### B. COMPETITIVE ENTERPRISES

Not all government enterprises in this country are monopolies. Many are similar in nature to private enterprises and are frequently in competition with them. The overlapping has long caused alarm to private interests, and in 1932 these interests succeeded in having a special investigation of government competition with private enterprise by a committee of the House of Representatives. In a statement to the committee one national organization representing private business listed about forty lines of industry in which there was competition with the government. The committee itself reported that "at least 225 items of trade, industry, personal and professional services" came to its attention, but what is meant by "item of trade" is uncertain. When to the activities of the Federal Government are added those of state, county, and local au-

thorities, the present extent of governmental enterprises becomes impressive.

To understand the kinds of business in which governmental agencies engage one must consider the circumstances under which the government enters into activities which are often similar, at least, to those of private enterprises. In some cases the real reasons are fairly obvious, but in others they must be inferred from the surrounding circumstances.

*Limitation of Private Enterprise.* While a policy of *laissez faire* assumed that in general productive activities could be performed more satisfactorily by private than by governmental enterprises, some exceptions to this rule were recognized at the outset and others have developed since then. Most of the exceptions occur when private enterprise is either unable or unwilling to perform a service in the manner deemed necessary for the public good.

Private concerns are seldom attracted to those types of service for which compensation cannot be collected on the basis of voluntary contracts with those who use the service or benefit from it. This is readily understood since the purpose of most private enterprises is to acquire profit from those who use the commodities or services furnished. Consequently, the construction and maintenance of lighthouses, even though essential for safe sea travel, is not attractive to private enterprises. The same is true of the operation of beacon lights for air travel. In neither case is there any feasible way in which those who benefit by the service can be charged for its use.

In some instances the services of private enterprises are inadequate and government enterprises fill the gap, as is the case with education. Here private and public schools operate side by side. So long as education was deemed essential only for those who could afford to pay for it, private institutions could perform this service as satisfactorily as could government enterprises. But when it was deemed essential to have universal education of children without regard for their parents' ability to pay, the facilities of private enterprises were not suited to perform this service. The establishment of a national employ-

ment service was made necessary by the inadequate service of private agencies. Cities and towns frequently own hospitals, amusement facilities, and parks which are either free or are operated on a non-profit basis.

In other cases governmental enterprises are necessary because the public lacks confidence in private enterprises. Insuring of bank deposits by the Federal Government was made necessary to restore confidence in banking institutions following the disastrous results of unwise financial practices, just as the postal savings system was established some years ago to encourage savings by those who did not trust private banks. In some states, workmen's compensation and other forms of insurance are furnished by the government. Advocates of a similar arrangement in New York state point out that 18 private companies failed between 1929 and 1935, leaving unsatisfied claims of \$2,600,000.\*

There are also many emergency activities. For example, during the World War the Federal Government engaged in shipping, both constructing and operating vessels to speed up the transportation of men and materials. Furthermore, as a part of the shipbuilding program, it was deemed necessary to construct homes close to the shipyards to house the workers. During the 1929 depression the Federal Government engaged in banking and trading operations. Through the Federal Farm Board vast quantities of grain and cotton were purchased for the definite purpose of raising the prices of these commodities. At the same time the government purchased and directed the buying and slaughtering of hogs for the dual purpose of reducing future quantities of pork and of supplying food for the destitute. Likewise, through the Reconstruction Finance Corporation loans were made to railroads, insurance companies, farmers, and even to banks themselves.

*Self-Service.* Numerous activities are undertaken by the government for its own service. Since the Federal Government, for example, requires a vast amount of printing in carrying on its usual functions, it does this for itself through the Bureau

\* *Business Week*, February 2, 1935.

of Printing. Because the maintenance of fighting forces calls for a wide range of activities similar to those carried on privately, the War Department operates arsenals which are manufacturing plants for guns and ammunition, and it also has a plant which furnishes saddlery and harnesses. The Navy Department operates shipyards for the construction and repair of ships, which in turn call for many industrial establishments such as steel foundries. Among other commodities manufactured at these yards are anchor chains, rope, paint, furniture, mattresses, valves, and engines. Both the War and Navy Departments have garment-manufacturing establishments to supply uniforms; they maintain stores, shops, and restaurants for the benefit of enlisted men; they provide hospitals and medical care for their forces. Farming is carried on in some instances as a source of food supply, as in the case of the dairy farm operated by the Naval Academy at Annapolis. These illustrations are sufficient to indicate the general nature of self-service activities. In many cases where the government furnishes itself with commodities and services it may not provide all that are required and may rely on private enterprise for the remainder.

*Regulation of Private Enterprise.* At times government enterprises are intended to regulate private enterprises through the medium of competition. In some cases this purpose is rather evident, while in others it is concealed and may be incidental to some other purpose. During the World War the Federal Government constructed a dam and power-generating plant at Muscle Shoals for the purpose of furnishing nitrates for gunpowder. After the war private companies sought to lease the plant for operation. This was successfully opposed by those advocating its operation by the government. Finally the undertaking became a part of the Tennessee Valley project. Some advocates of this more comprehensive program argued that a hydro-electric enterprise could be used as a "yardstick" by which the efficiency of private enterprise could be measured. It was also argued that as a government enterprise it could force reduced rates from private companies, because direct

competition in an area would force private companies to reduce their rates in that locality, while rates in other localities would be reduced for fear of further government competition. Efforts have also been made to have the Federal Government extend activities of this kind to force price reductions for natural gas. In proposing a loan of \$50,000,000 to an agency to be created by the Texas legislature for the purpose of constructing pipelines to Detroit via St. Louis, the Governor of Texas is reported as saying: "We thought the Federal Government might be interested in this project as a measuring stick in the price of gas to consumers, just as it is using the Tennessee Valley Authority in the electrical field."

State and local governments, likewise, may establish competitive enterprises for the purpose of indirect regulation, instead of attempting to regulate the prices and services of private concerns in a direct manner, with all the accompanying legal difficulties. This appears to have been the intention of the state of North Dakota in undertaking home-building, banking, and the storage, milling, and marketing of grain. Similarly, the city of Lincoln, Nebraska, engaged in the wholesale and retail distribution of gasoline, while the city of Portland, Maine, established municipal fuel yards.

*Income or Profit.* Government enterprises may also be undertaken for the purpose of obtaining revenue. It is reported that Crisp County, Georgia, expects to obtain sufficient income from the operation of its own hydro-electric plant not only to cover all expenses of operating it but also to abolish all county taxes. Throughout the country there are some eighty or more cities which are tax-free because of incomes from enterprises which they operate. In Pennsylvania and some other states, alcoholic beverages are marketed through state liquor stores at prices intended to furnish revenue to the state.

#### C. JOINT ENTERPRISES

While most undertakings, whether competitive or monopolistic, are usually either distinctly private or distinctly governmental enterprises, this is not always so. In some

instances there are joint relations as to ownership and operation.

*Ownership or Operation.* At times there may be a separation of ownership and operation with one in the hands of private interests and the other in the hands of the government. The most conspicuous instance of private ownership and governmental operation occurred in connection with the railroads in the World War. During this conflict the operation of privately owned railroads was placed in the hands of a Federal Administrator of Railroads. After the War these roads were returned to their private owners for operation by them. In the Federal Reserve Banks there is private ownership with the government sharing in the active management by appointing several of the members to the Board of Directors for each bank and by the governmental selection of the Board of Governors which supervises the entire Federal Reserve System.

There may also be government ownership with private operation. An example of this is the hydro-electric generating plant which is being constructed by the Federal Government at Boulder Dam on the Colorado River. Under present plans the government will own the plant, but the right to operate it will be leased to private interests. How successful this combination of government and private activities may prove is uncertain. In some respects it is particularly useful in the development of natural resources, such as petroleum, since the owner can dictate the terms and conditions of use without incurring the obligations of active operation.

In the city of Philadelphia the gasworks are owned by the municipality but are leased to the United Gas Improvement Company for private operation, and a part of the city's subway system was constructed and is owned by the city, but is leased for private operation to the Philadelphia Rapid Transit Company.

*Ownership and Operation.* In still other instances both ownership and operation may be shared between government and private interests. During the depression of 1929 the Federal Government made extensive investments through the

Reconstruction Finance Corporation, to maintain the solvency and operation of private enterprises, the chief beneficiaries being railroads, insurance companies, and banks. The assistance to the banks took the form both of loans and of the purchase of preferred stock, so that, as a stockholder, the government is a part owner and consequently shares in the management of the enterprise. Indeed, the use of such stock was intended to give the government internal control over banks, especially weak ones. Assistance, likewise, was given through loans, with the government generally exercising a considerable degree of managerial control until the loan was paid. Some of these organizations have failed, and others are likely to do so before the obligations to the government have been satisfied. When this occurs the government, as a creditor, becomes with private creditors of the bankrupt enterprise a part owner of the assets.

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It appears, therefore, that private enterprise has predominated in this country because of a governmental policy of *laissez faire*. Under this policy, self-interest was expected to guide the business conduct of individuals in a manner which would best serve society as a whole. Business activities, enjoying freedom from governmental control, were expected to develop under the incentive of private profits and were subject only to the automatic control of unrestricted competition. Changing conditions have modified the traditional characteristics of private business and are likely to modify them still further. Even though most industries are conducted privately, government enterprises have come to play an important part in commercial activity, and, as time goes on, there are an increasing number of reasons for the government's entering the various fields of business.

#### QUESTIONS

1. What policies may a government adopt with respect to the organization and direction of business activities?
2. What is meant by a *laissez-faire* policy?

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3. On what assumptions does a *laissez-faire* policy rest?
4. Is a tariff consistent with a *laissez-faire* policy? Give reasons.
5. What is meant by the "traditional characteristics of private business"?
6. "Today, as in earlier times, the prosperity of individuals depends primarily on their own efforts, intelligence and ingenuity." Is this statement valid? Give reasons.
7. What circumstances account for the existence of government enterprises?
8. "Whenever the government competes with private business, there is necessarily unfair rivalry." In what sense, if any, can such rivalry be said to be unfair?
9. "Impersonal ownership of productive wealth does not seriously affect the conduct of business." Is this statement valid?
10. "The separation of management from ownership of productive wealth is no cause for alarm. It simply means that the control of enterprises is placed in more competent hands than would otherwise be the case." Do you agree with this view?
11. "Competition serves to harmonize conflicting interests." To what extent, if at all, is this statement valid?
12. "Government monopolies are no less dangerous than are private monopolies." Evaluate this statement.
13. How, if at all, has the development of large enterprises interfered with the traditional arrangement for the conduct of business?
14. "The real reason for government engaging in business must at times be inferred from surrounding circumstances." What is meant by this statement?
15. "That private business is more satisfactory than government enterprise is proved by the fact that private enterprises are much more numerous and prominent than government enterprises." Do you agree? Give reasons.
16. In what ways may there be joint conduct of enterprises between the government and private interests?
17. What do you consider to be the test or tests of whether enterprises should be conducted privately or by the government?
18. "There are no essential differences between enterprises conducted by the government and those conducted privately." Is this statement valid? Explain.
19. "Naturally government enterprises cannot be as efficient as private concerns." What circumstances, if any, do you think cause government enterprises to be less efficient than are private enterprises? Are there any advantages on the side of government undertakings?
20. It is sometimes said that "the basic distinction between private enterprises and government enterprises is not what they do nor the way they do it, but the reason for doing it." What is meant by this statement? Do you agree with it? Explain.

## CHAPTER II

### BASIC TYPES OF BUSINESS ORGANIZATION

ORGANIZED activity extends over a wide range of human interests and affiliations. In addition to those of a business character, individuals find themselves in the midst of family, religious, political, charitable, educational, recreational, and other interests. These activities invariably have some business aspects incidental to their main purpose. Thus clubs, churches, and museums employ labor, own land, buildings, and other equipment, purchase supplies, and make other commercial contracts. In some cases the commodities and services furnished are similar to, and perhaps identical with, those furnished by distinctly business enterprises. Fraternal organizations may offer to insure their members in the same way that companies specializing in writing insurance offer their services to the public. Social clubs frequently furnish meals similar to those furnished by restaurants, entertainment similar to that supplied by theaters, and lodging comparable to that of hotels. Churches at times undertake to sell commercial products on a commission basis and thus become a type of distributing agency.

Only forms of organization employed by enterprises which are rather deliberately, definitely, and predominately, if not entirely, of a business character will be considered here, and even some of these will be excluded. The exclusions include the unlawful forms, those distinctly temporary in character such as underwriting syndicates, and those which like mergers and amalgamations are not basic forms of organization. This leaves the field of inquiry restricted to the individual proprietorship, partnership, corporation, and business trust.

Each type of organization has some merits and some limitations. Since individuals engaging in business may ordinarily choose the form of organization best suited to their interests, the customary comparisons of advantages and dis-

advantages are made from the viewpoint of the owners. Thus the limited financial liability which accompanies some forms makes them advantageous to investors but not necessarily so to creditors. In reality the points of strength and of weakness depend partly on the point of view and partly on the circumstances under which they are employed. Consequently, it will be well to consider each form with respect to such features as ease of formation, the liability of investors, extent of investment, sphere of activity, duration, privileges and burdens, and the efficiency of management.

### I. INDIVIDUAL PROPRIETORSHIP

The individual proprietorship is the most common form of business organization. Its relative frequency is accounted for largely by its prominence in agriculture and the professions. There are more than six million farm enterprises in this country and most of these are individual proprietorships. For the practice of some professions, notably medicine, this is the only form of organization available. According to the 1930 Census 84 per cent of the retail stores were organized on this basis, 44 per cent of the construction enterprises, and 31 per cent of the wholesale distributing concerns. About 52 per cent of the manufacturing establishments were either individual proprietorships or partnerships.

#### A. REASONS FOR USE OF PROPRIETORSHIP

*Formation.* One reason for the popularity of the individual proprietorship is the ease with which it comes into existence. No formality of any kind is required. Under the common law individuals had the right to make enforceable contracts, and both federal and state governments have recognized this traditional right. The famous fifth amendment to the Federal Constitution forbids the Federal Government to deprive persons of life, liberty, or property without due process of law and the equally famous fourteenth amendment imposes the same re-

strictions on states. Courts have held that the liberty referred to in these amendments included not only personal and physical liberty, but also the freedom to make contracts which do not conflict with public property or run counter to law. This freedom of contract is the basis for individual proprietorships. To use this form of organization, therefore, no special government permission is required. In most fields of business anyone with sufficient funds, or the ability to borrow them, can operate an enterprise of his own. By merely doing the things necessary for the conduct of the undertaking one brings the enterprise into lawful existence.

*Personal Initiative.* In so far as personal interest can contribute to the success of a business venture the individual proprietorship offers the maximum opportunity for such interest. Through personal ownership of the assets of the business the proprietor has personal control over the conduct of the enterprise. He may operate it wisely or unwisely, efficiently or inefficiently. Ordinarily he alone stands to gain by its success and to suffer by its failure. Consequently, there is a strong incentive for him to exercise individual initiative and ability to the limit.

*Sphere of Activity.* There is also almost unlimited opportunity to expand and contract the scope of activities. An individual can engage in as many lines of business at the same time as he sees fit. He can, for example, operate a hotel, have a shoe store, conduct a bus line, and be a lawyer all at one time. Moreover, he can shift from one enterprise to another, or change completely as his interests seem to dictate. Without the consent of anyone he can dispose of all his commercial interests and give his entire attention to the practice of law, or he can extend his present interests to include operation of a theater, conduct of an automobile agency, or control of a farm. It might not be, of course, expedient for a single individual to distribute his efforts over so many different activities, but he is legally free to do so. Such freedom does not exist with other forms of organization, as will be seen.

**B. LIMITATIONS TO USE OF PROPRIETORSHIP**

Although the individual proprietorship has certain features which account largely for its very extensive use, there are also certain features which operate to restrict its use.

*Liability.* The financial responsibility which a proprietor must assume exposes all his personal wealth to the risks of the enterprise. From a bookkeeping standpoint a distinction is customarily drawn between the business and the proprietor. Technically, the proprietor becomes a creditor of the business. If he invests \$100,000 in the enterprise this amount is shown as a credit in the proprietor's account, which means that it is an obligation of the business to the proprietor. The law, however, recognizes no such distinction between the business and its owner. Legally, they are one and the same. If the business fails, the proprietor's entire personal fortune, not merely that invested in the enterprise, is at the disposal of his creditors. If he finds himself unable to meet debts contracted outside his business, the assets of the business are available for his outside obligations. Not infrequently prosperous enterprises have been thrown into bankruptcy for settlement of non-business debts of the proprietor, and many personal fortunes have been lost through business failures.

Many individuals who are in business for themselves and who have wealth which they do not wish to have used in their undertaking have attempted to avoid the consequences of unlimited liability by a rather dangerous device. They transfer title to property not used in the business to a relative or close friend. This places the property beyond the reach of the proprietor's creditors, provided there has been an unconditional transfer of title under conditions which do not indicate that the purpose of the transfer was to evade liability. Ordinarily, proof of evasion is difficult and unconditional transfer is comparatively easy. But the reduction of risk in one direction is accompanied by creation of risk in another. The property is now at the disposal of such creditors as the new owner may have or come to have. Moreover, the return of the property

to the original owner is entirely dependent on the willingness of the one to whom it has been entrusted.

Under some circumstances, however, unlimited liability is an advantage to those engaged in business. It tends to increase the proprietor's credit standing both in purchasing goods on account and in borrowing at banks. In professional activities it inspires confidence on the part of clients, patients, and customers in those persons who are known to have not only their reputations but personal fortunes at stake.

*Management.* Efficient management results from a combination of ability and initiative. While the individual proprietorship offers abundant opportunity for personal interest and initiative, an enterprise of even moderate size calls for wider technical knowledge and experience than one person is likely to possess. As purchasing agent the proprietor must be acquainted with the qualities of the things he buys; as sales manager he must be acquainted with the conditions of the market and the most effective means of reaching customers; as credit manager he must know how to evaluate the responsibility of his customers; as personnel manager he must know how to handle labor; as financial officer he must anticipate his needs and make provision for them. All these and many other responsibilities are likely to fall on the shoulders of the proprietor. It is of course true that he might delegate some of his responsibilities. But here the influence of his unlimited financial liability comes into operation; he is reluctant to delegate power when he must accept full financial responsibility. The proprietorship, therefore, is not well suited to large enterprises where extensive delegation of authority is highly essential for efficient management.

*Duration.* Finally, the individual proprietorship is a fragile form of organization in that it is easily destroyed. Revolutions and business failure may of course destroy any enterprise. But, in the absence of these, the life of the proprietorship depends upon the life and health of the proprietor. Death or insanity brings the enterprise to a compulsory end. Poor health may merely prompt the proprietor to sell or otherwise

transfer his interest in the business to someone else. This change may not be known to the public and may not affect the manner in which the enterprise is operated. Legally, however, when this occurs a new business organization is formed. Such uncertainty in the life of an enterprise is not important in some businesses, although it is in others, especially in those furnishing durable and valuable equipment which is guaranteed for a period of years and may require servicing for a much longer period.

## II. PARTNERSHIP

Although vastly less numerous than individual proprietorships, partnerships are found in nearly all types of business enterprise but are more prominent in some than in others. Brokerage and investment banking are fields in which this form of organization is common. It is also widely used in wholesale distribution and in some professions, such as law and accounting.

Roughly, partnerships fall into two major groups, of which the general or ordinary partnership is the most frequently encountered. Some states have modified the common law basis of partnership, particularly with respect to liability of partners, by direct legislation. This has given rise to a variety of special types such as "limited partnerships," "partnership associations," and "joint stock companies." The special considerations granted are recognized only in the state where the partnership is formed, although by statute other states may also recognize them. The usefulness of the special partnership is for the most part confined to exceptional situations, and, for that reason, only the general partnership will be considered here.

### A. REASONS FOR USE OF PARTNERSHIP

The ordinary partnership is not used because it possesses unique qualities, but rather because it offers a combination of features which are attractive for certain enterprises. It retains, though generally in reduced measure, most of the

advantages of the individual proprietorship and in addition strengthens certain points of weakness found in one-man enterprises.

*Formation.* Except for the individual proprietorship, the partnership can usually be more easily formed than any other kind of business organization. No legal formality or expense is required for either partnership or individual proprietorship. Both types of organization are based on the right of individuals to make contracts. When, therefore, individuals agree to certain terms under which they jointly conduct a business enterprise, the partnership comes into existence. The chief difficulty centers in obtaining suitable partners. Not only is it necessary to find individuals with funds to invest, but it is rather essential that they possess qualities of honesty, suitable temperament, and personality. Without these qualities internal friction is likely to develop. After acceptable partners have been found there is often a further difficulty in reaching an agreement on such matters as the respective shares in management, profits, and losses of the enterprise.

*Personal Interest.* A partnership ordinarily offers considerable opportunity for personal interest and initiative. The assets of the business are owned personally by the partners. This does not mean that each partner owns specific property, but rather that all property is owned jointly by them according to the terms of the partnership agreement. As owners they are in a position to claim all earnings in excess of their contracted expenses. Consequently they have an incentive to exert their best efforts in planning and directing the activities of the enterprise. In some cases one partner may furnish the investment and another supply the managerial knowledge and experience, but this does not necessarily impair their personal interest in the conduct of the business. It is they who stand to gain by the success and to lose by the failure of the enterprise. At the same time, it is doubtful whether, in general, there is such keen personal interest and initiative when ownership, control, and responsibility are shared as when they center upon one person as with the individual proprietorship.

*Sphere of Activity.* There is also considerable freedom for shifting or for completely changing from time to time the business in which a partnership is engaged. Changes can be made as often and as extensively as the interests of the partners dictate. However, the changes must be in harmony with the partnership agreement. This document can be modified by mutual consent to provide for changes, but at any given time it alone sets the limits within which the activities of the enterprise must be conducted.

*Investment.* The opportunity for larger investment is probably the most important advantage which the partnership has over the individual proprietorship. In many instances enterprises can be operated more economically and profitably with larger investment than one person is customarily in a position to furnish. Through the partnership it becomes possible not only to combine the direct investment of two or more individuals, but also to combine their credit for borrowing and other purposes connected with the business. While larger investment tends to increase the scale of operation, the partnership is not prominent among large-scale enterprises. The leading exceptions are found in the brokerage and private banking fields, with J. P. Morgan and Company a conspicuous illustration of the latter.

*Management.* Even when an individual has sufficient funds to engage in business for himself, it may be expedient to have others associated with him who have a personal risk in the venture. Some partnerships are formed primarily to combine the investment of one partner with the managerial ability of another. The increasing complexity of modern business and the growing importance of technical knowledge makes successful single-handed management almost impossible. By a division of labor among joint owners with a personal interest in the success of the undertaking, there is opportunity for better management. An automobile sales agency, for instance, may be operated advantageously if one member is responsible for the sale of cars and another for the mechanical work of servicing. In practicing some of the professions the same principle of

specialization is employed. Often the successful practice of law requires a combination of abilities seldom found in the same individual. One lawyer may be an excellent trial lawyer but not equally well qualified to do the research work necessary in preparing a case. His association with a person possessing outstanding ability in research furnishes a strong combination of legal talent.

From the standpoint of profits, and perhaps of service to clients, there may also be an advantage in maintaining strict secrecy concerning the operations and conduct of the enterprise. When several individuals are associated in such an undertaking the partnership is a serviceable form of organization. Its operations are generally surrounded with the same privacy as are the personal affairs of the partners.

#### B. LIMITATIONS TO USE OF PARTNERSHIP

For the most part, the limitations of the partnership are similar to those of the individual proprietorship, although intensified as the number of partners increases.

*Liability.* Usually the most unattractive feature of partnerships is the unlimited liability of the partners for debts of the business. Each partner becomes liable for all the debts of the partnership. Among themselves the partners may agree as to how losses will be shared, but creditors are in no way bound by this arrangement. Every financial obligation of the business is a potential personal obligation of each partner, and creditors may claim all the personal wealth of any one of the partners, or of them all, if necessary to satisfy claims. The fact that one partner may incur debts by exceeding the authority granted by the partnership agreement does not relieve the other partners from personal responsibility for the debts. Hence, investors in a partnership are exposed to greater financial risk than if they had a similar investment in an enterprise of their own.

*Dissolution.* A serious weakness of partnerships is their uncertain life. Here also, the disadvantage is greater than with the individual proprietorship. Any one of several things may cause the termination of a partnership, such as the death,

insanity, insolvency, or withdrawal of any one of the partners. While these are the same circumstances that also terminate individual proprietorships, their importance is greater in the case of partnerships for the likelihood of their occurrence increases as the number of partners increases. An individual proprietor must maintain only his own solvency in order to maintain the solvency of his business, but the solvency of the partnership may be jeopardized by the insolvency of any member. Furthermore, as the number of partners increases the opportunity for friction and dissatisfaction grows. This may result in the withdrawal of a member, in which case again there is a dissolution of the enterprise. Of course the legal dissolution of an enterprise does not necessarily mean its economic dissolution. The financial interest of a withdrawing or an incapacitated partner may be purchased by the remaining partners or arrangements may be made for the addition of a new member to the partnership. In many cases, however, the successful completion of such an arrangement is difficult; often it is impossible.

### III. CORPORATION

The roots of modern business corporation extend back to the days of antiquity. Before there was any legal recognition of corporations they were used by the Greeks and Romans as a means of organizing religious and municipal activities. Until the nineteenth century they were rarely used for business purposes. Among those formed earlier were the East India Company, and the Virginia Company, which founded Jamestown. Both these companies were short-lived, but the Hudson's Bay Company, for which Henry Hudson was sailing when he discovered the Hudson River, is still in existence. During colonial days some business corporations were formed, including water-supply companies, which were known as "fountain societies." The only survivor of these colonial corporations is "The Philadelphia Contributorship for the Insuring of Houses for Loss by Fire." After the Revolutionary War, corporations increased,

although comparatively few were established for business purposes. Included among the undertakings for which these few were formed were banking and insurance, toll bridges, navigation, and manufacturing. Except for banks, most of the corporations were unsuccessful, and not until after 1800 did this form of organization increase. Thus the business corporation is a relatively modern product.

#### A. IMPORTANCE OF THE CORPORATION

When judged by their number, corporations hold second rank, being far outdistanced by individual proprietorships, of which there are millions as against less than 500,000 active corporations. Aside from the types of business in which they do not appear at all, as in the practice of medicine, there is extensive variation in the degree to which they are used. For instance, corporate farming is relatively unimportant numerically, although there are some large enterprises of this kind. At the other extreme are railroads, financial institutions, trading enterprises, and manufacturing establishments. Of all the corporations reported to the Bureau of Internal Revenue in 1929, about 30 per cent were financial enterprises, 25 per cent engaged in trading, and about 20 per cent fell under the heading of manufacturing. Within major branches of business, such as manufacturing, the corporation is distinctly more important in some industries than in others. The 1929 Census of Manufactures reports only 16 industries in which the establishments are all owned by corporations. Most of these industries have relatively few establishments. Iron and steel blast furnace operation heads the list with 105 units. In some other and larger industries corporate organization predominates, as with motor vehicles and petroleum refining.

But the number of corporations is likely to be a deceptive guide to their importance. In Table 1, showing the importance of corporations in some of the larger manufacturing industries, it will be noticed that corporate organization accounts for only 25 per cent of the cigar and cigarette establishments, and yet these employ 86 per cent of the workers and furnish 96 per cent

of the value produced in that industry. Much the same situation exists with flour and grist mills.

TABLE I. IMPORTANCE OF CORPORATIONS IN SOME OF THE LARGER MANUFACTURING INDUSTRIES

Industry	Percentage of		
	Establishments	Workers	Value of Production
Car construction and repair.....	99	99	99
Cigars and cigarettes.....	25	86	96
Cotton goods.....	93	99	99
Electric machinery.....	78	99	99
Flour and grist mills.....	33	85	91
Iron and steel rolling mills.....	98	99	99
Wholesale meat and packing.....	57	96	96
Motor vehicles.....	89	99	99
Petroleum refining.....	96	99	99
Printing and publishing (book and job) .....	39	79	80
News and periodical publication.....	42	82	90

In still other ways the importance of the corporate form of organization manifests itself. Professor Means has called attention to the dominating influence on the economic life of the nation exercised by a few extremely large corporations. A concern like the American Telephone and Telegraph Company has assets equal to about 6000 average-sized non-financial<sup>1</sup> concerns. The Pennsylvania Railroad and the United States Steel Corporation are equivalent to about 4000 each, while a concern with assets of only \$100,000,000 would equal about 200 average-sized enterprises. It is further estimated that less than .07 of 1 per cent of the corporations control nearly half of all corporate wealth, about 35 per cent of all business wealth, and about 19 per cent of the national wealth. Of the 300,000 non-financial corporations which in 1929 reported net income to the Bureau of Internal Revenue, the 200 largest corporations account for 43 per cent of the total income reported, while the 800 next largest account for approximately 19 per cent.

The corporate form of organization is important, not only because of the size of some of the enterprises which have

<sup>1</sup> Banks and financial institutions excluded.

adopted it, but also because these large concerns are growing in size faster than smaller ones. Professors Berle and Means<sup>1</sup> estimated that the gross assets of the 200 largest non-financial corporations increased during 1929 at a rate of 10.6 per cent, whereas the wealth of all non-financial corporations increased only 5.8 per cent. They estimate that if large corporations continue to grow at the same rate as they did between 1924 and 1928, it will require only thirty years, or until 1960, for virtually all industrial activities to be in the control of 200 giant corporations. Moreover, during the depression following 1929 it appears, from a government report, that large corporations continued to grow while thousands of small competitors were wiped out. Whereas the 200 largest corporations controlled about 50 per cent of corporate wealth in 1929, this increased to 55 per cent by 1931, and was estimated to be even greater in 1932.

There is to be considered in addition to the size of corporations and their rapid growth, the fact that the control of corporate activity appears to be concentrated in the hands of a comparatively few individuals. This was first brought forcefully to the attention of the American public by James W. Gerard, former ambassador to Germany, who declared in 1930 that sixty-odd citizens of the United States — chiefly leaders in finance and industry — were the real rulers of America. Later President Roosevelt called attention to a statement made by a prominent banker that "fifty or sixty large corporations, each controlled by two, three, or four men, do 80 per cent of the industrial business of the country." Professors Berle and Means observe that "less than two thousand men were directors of the two hundred largest corporations in 1927. Since an important number of these are inactive, the ultimate control of nearly all industry was actually in control of a few men."

#### B. NATURE OF THE CORPORATION

The corporation is a legally recognized form of organization. In this respect it differs from the individual proprietorship and

<sup>1</sup> *The Modern Corporation and Private Property*, Commerce Clearing House, Inc., 1932.

partnership. While these are lawful means of conducting business, they are not recognized by law as forms of organization separate and apart from the individuals who make business contracts and who are responsible for their performance. But the corporation is recognized as a form or organization which exists independently of its members. In fact, the Supreme Court has viewed it as an artificial person created by law, and the protection which the Constitution extends to persons includes these artificial persons.

While both federal and state governments have power to create corporations, their creation has actually been almost entirely by the states. In the exercise of this power of incorporation considerable rivalry has developed among the states and some of them obtain an appreciable amount of revenue from incorporation fees. The whole business has been put on a routine basis. Instead of separate legislation for the creation of each corporation there have developed general incorporation laws by means of which the creation of artificial persons assumes something of the nature of a slot-machine operation. Largely as a result of rivalry among states, power has often been unwisely granted to persons in charge of corporations and inadequate provision made for their responsibilities. Agitation for federal incorporation of enterprises engaged in interstate commerce has, however, not gone beyond the stage of discussion.

In creating corporations perpetual life is usually granted to them. This feature, however, is not peculiar to the corporation. It is found also with some of the special partnerships, notably the joint stock company. But of the most widely used forms of organization it occurs only with the corporation. Even here it is not universal, since some are created for a limited period of time. Although incorporation for a limited period has been rather exceptional, it has been proposed for all private enterprises with the provision that renewal may be made at intervals if the enterprise can demonstrate that it is of service and importance to the public.

In the case of the individual proprietorship and partnership,

ownership of property is personal, in that the title to property is owned by natural persons. But with the corporation, property is owned only by an artificial person. Both tangible and intangible property is divisible into units or shares of stock, each of which represents a proportionate interest in the property. Thus shareholders do not own the property of the corporation jointly as do partners; they merely own an interest in the property to which the corporation holds title.

The units or shares into which the stock of a corporation is divided are freely transferable from one person to another. Whereas the transfer of investment among partners generally requires a new partnership agreement, which technically gives rise to a new organization, the transfer of shares in a corporation does not in any way affect its existence and may not even affect the manner in which the enterprise is conducted. Occasionally there are issued special types of stock which are not freely transferable. Thus employees may be given the privilege of owning stock only so long as they are employees of the company and required to dispose of their stock either to the company or to other employees. But restrictions of this sort are not typical.

#### C. REASONS FOR USE OF THE CORPORATION

*Limited Liability.* One of the most attractive aspects of the corporation is that the liability of the investors is limited. This advantage of the investors is due to the fact that the corporation is a legal person separate and apart from the shareholders. As a legal person the corporation is liable for all its obligations to the full extent of the assets, but the financial liability of individual shareholders is limited. After a corporation has received full payment for the shares which have been issued, the liability of the holders is usually restricted to their actual investment in the shares. In some instances, especially for banks, there may be "double liability," which means that if the enterprise becomes insolvent each shareholder has an additional liability equal to the face value of his shares. Even with this additional liability the shareholders have the advan-

tage of knowing definitely and in advance their maximum liability. If, however, a corporation sells shares and calls for payment of only a part of their face value at the time they are issued, all holders are subsequently liable for the unpaid balance whenever it is called for.

From time to time occasions arise during which it is expedient for shareholders to permit further assessments to be levied against them. In the event of insolvency the creditors can collect only to the extent of the assets of the corporation. If these assets do not fully satisfy the claims, the creditors must accept their losses, since claims cannot be made on shareholders for balances they have not yet paid. But since the process of liquidation may sometimes cause severe losses to members of the corporation, shareholders, in order to protect their investments, may find it expedient to furnish sufficient additional funds to prevent insolvency or to restore solvency. Under these circumstances, if any shareholder feels that the payment of an assessment is "throwing good money after bad," he can accept his loss rather than pay the assessment.

*Larger Investment.* The corporate form of organization also encourages larger investment in business enterprises than would otherwise be likely. In addition to the limited liability of shareholders other factors influence the size of investments; for instance, the divisibility of the corporation's stock, the value of the shares, and the kinds of shares.

The property or stock of a corporation may be divided into many or few shares. In a "family corporation" or a "close corporation" the number of shares is likely to be small. At the time the Anheuser-Busch Company was formed, the stock was represented by only 480 shares, which were held for a number of years by only three persons. When, on the contrary, extensive public investment is sought, the number of shares or units is likely to be large. The American Telephone and Telegraph Company is authorized to issue 2,500,000 shares, of which it has actually issued about 1,900,000, held by about 675,000 persons.

Whether there may be many or few shares depends partly on

the investment which each share is to represent. If partners incorporate solely for the purpose of limiting the liability of the present investors, the value of shares into which the property is divided is of little or no consequence. But, if there is to be a distribution of stock among the investing public, the par value of the shares is more important. The most common value is \$100, although shares of \$50, \$25, and \$10 are not infrequent. Low par values attract small investors without interfering with the larger investors, who may buy as many shares as they desire. When corporations seek to create good-will through employee and customer ownership the lower values are likely to be particularly suitable.

It must be remembered that the par value of shares bears no necessary relation to the subsequent value of the shares on the books of the company. The book value may increase through reinvested earnings or may decrease through losses. Moreover, the market value seldom corresponds with either the par or the book value, a condition due mainly to the fact that the market value tends to reflect the expectation of the future, which is not shown by either par or book values.

The tendency toward corporate investment has also been increased by the variety of shares made available for purchase. When distinctly private undertakings first became organized extensively as corporations there was only one class of shares, known as common or ordinary shares. Each share represented the same proportionate interest in the enterprise as any other share: the same investment, the same voting power, the same claim on earnings and on the net assets at the time of liquidation. Today the picture is distinctly different. The most prominent classes are common and preferred, voting and non-voting, par and no-par shares. These in turn have been divided into additional classes such as prior preference, participating and non-participating, cumulative and non-cumulative, redeemable, convertible, and sinking fund. This assortment furnishes investment possibilities for all types of investors from the most conservative to the most daring.

While a variety of shares serves to attract different kinds of

investors, the existing assortment cannot be said to be essential for adequate investment in business enterprises. Some classes of shares have been designed for subsidiary purposes, such as to give the present investors and management the advantage of additional funds without the necessity of dividing the control and profits proportionately with new investors. Other classes serve promoters by enabling them to trick gullible investors.

Investment in corporate enterprises tends to be increased not only through shares of stock but also through bond issues. While most enterprises borrow money from time to time, the majority of them are not able to borrow for extended periods on the basis of a bond issue. Especially is it true with individual proprietorships and partnerships whose indefinite legal life in itself precludes this type of investment. Bond issues are likewise unsuited to small corporations, since the expense becomes prohibitive unless the issue is large. In many cases the credit of a corporation, including its earning power, is not sufficient to justify an issue of bonds. On the other hand, enterprises in some industries, notably railroads and other public utilities, use bonds extensively as a part of their permanent financial structure. The income tax returns of 1929 indicate that in all kinds of business bonds accounted for about 15 per cent of the corporate assets as compared with 30 per cent for shares of stock.

Finally, corporate investment on a large scale is encouraged by the possibility and facilities for liquidation of securities. Shareholders cannot withdraw their investment from the enterprise nor can bondholders demand payment of their loan until the time of maturity; but at any time investors are free to sell their securities and thus transfer ownership of the investment. Furthermore, facilities have been developed in the form of stock exchanges through which holders of securities can convert shares and bonds into cash within a few hours. These facilities also increase the opportunity for investors to borrow, using their securities as collateral, since constantly available information as to the market value of the collateral, plus a ready market for its disposal if the borrower fails to meet his

obligation, decreases the lender's risk and increases his willingness to lend.

*Duration of Organization.* As a legal person the corporation has an existence independent of those who are members of it. Hence it has a continuity of life not possessed by the personally owned enterprises. Furthermore, most corporations are granted the right of perpetual existence. Unless disrupted by revolution or insolvency they may continue indefinitely as a business unit regardless of the life or death, fortune or misfortune of the shareholders. Such durability not only increases the attractiveness of corporate investment but offers protection to customers. With an increasing use of mechanical and other more or less permanent equipment in both homes and factories the importance of guarantees and servicing increases. These can be furnished more satisfactorily by an organization which is not necessarily disrupted by the death, insanity, insolvency, or withdrawal of individual investors in the enterprise.

*Opportunity for Better Management.* The corporation offers greater opportunity for efficient management than do the personally owned forms of organization. In the first place, the way is opened for delegation of authority. Administrative duties may be divided and placed in the hands of individuals selected because of their particular qualifications to manage certain aspects of the business. The limited liability of shareholders removes the main barrier found with individual proprietorships and partnerships to such delegation of authority. Secondly, expert management may more easily be obtained when the enterprise becomes sufficiently large to employ high-grade executives and technical advisors. Although large salaries do not necessarily reflect unusual executive and administrative ability, the demand for first-class executives places a value upon their services which small enterprises are unable to meet. The corporate form of organization, however, does not assure good management, but merely contributes a greater opportunity for obtaining it.

**D. LIMITATIONS OF THE USE OF CORPORATIONS**

*Formation.* One of the barriers to the more extensive use of corporations is the requirements for its creation. Like the partnership, it is an association of individuals, but, unlike the partnership, it cannot do business until it is authorized to do so by the state. Individuals desiring to form such an association must make formal application to the state, setting forth, among other stipulations, the purpose for which the business will be conducted. If the application is granted, the state issues a charter, which authorizes individuals to unite as a corporation and conduct such business as is set forth therein. Aside from the formality, which requires legal expense in most cases, there are incorporation fees which must be met.

*Scope of Activity.* Since the activities of a corporation are set forth in its charter, this document, rather than the desires of the shareholders, determines the scope of legal activities. With the advent of bus, truck, and air transportation most railroad companies found that their charters did not permit them to engage in these forms of transportation. In some instances the limitation was overcome by the formation of new corporations to perform additional services, as was the case with the Greyhound Bus Lines of the Pennsylvania Railroad Company. Other corporations request and are granted more powers than they may need at the time of organization. The Chemical Bank and Trust Company was chartered over a hundred years ago to manufacture chemicals, but a provision in its charter for receiving deposits and making discounts made possible its subsequent activities as a bank. Even when efforts are made to foresee and provide for future developments, conditions are likely to arise which are not covered by the charter. At the time when early breweries and distilleries were chartered in this country no one contemplated that their activities would be declared illegal. Consequently, with the advent of prohibition, some of these companies found difficulty in changing into other lines of business.

*Burdens.* After a corporation has been formed it is subject

to special burdens. Both federal and state governments may, and do, impose taxes on these enterprises. Sometimes the tax is levied on the amount of capital stock, sometimes on income, and sometimes on both. Other burdens are imposed in the form of reports which prevent corporations from conducting their affairs with the same secrecy as is possible with individual proprietorships and partnerships. Most states require corporations under their jurisdiction to submit annual reports, but with the increased federal regulation of securities, this requirement is less significant than formerly. Some states also require certain information from corporations doing business in the state. An interesting example of this is that the only public source from which information may be obtained concerning the financial status of the Ford Motor Company is in the state of Massachusetts, where a yearly statement must be filed, even though the company was not created in that state. Corporations are also subject to investigation by governmental agencies and are required to furnish information which it would not be necessary for personally owned enterprises to furnish.

#### E. CORPORATIONS AS GOVERNMENTAL AGENCIES

While corporations are used mainly for the conduct of private enterprise, they are also used by the Federal Government in conducting some of its ventures. This began during the World War. At that time the Emergency Fleet Corporation was formed to construct and operate vessels capable of meeting the commercial requirements of the United States. In order to buy, store, and sell at reasonable prices such commodities as wheat, flour, meal, beans, and potatoes the Food Administration Grain Corporation was formed. For the purpose of furnishing housing, transportation, and other community facilities to industrial workers engaged on Army and Navy contracts, the Federal Government created the United States Housing Corporation. Through the Inland Waterways Corporation the government owned and operated barge lines and aided in the development of canals and other inland waterways.

Beginning in 1932 the use of corporations by the govern-

ment was renewed. The inroads of the 1929 depression were threatening a colossal insolvency of private business, and, to stem the tide, Congress authorized the creation of the Reconstruction Finance Corporation, through which financial aid would be furnished to private concerns, especially banks and railroads. This corporation was chartered in the state of Delaware with an authorized capital of \$2,500,000, which Congress instructed the Secretary of the Treasury to furnish. Thus the United States Government became the sole stockholder in this giant enterprise. The Commodity Credit Corporation was created under the laws of Delaware in 1933 for the purpose of dealing in agricultural commodities, to lend or borrow money on them, and to encourage farmers, producers, and others to enter marketing plans and agreements through which reduction of farm acreage and production of agricultural commodities for market can be effected. The Public Works Emergency Housing Corporation was formed in the same state for the purpose of promoting low-cost housing and slum clearance projects so as to provide low-rental homes for those with low incomes. Among the corporations which the Federal Government itself created are the Federal Farm Mortgage Corporation, the Federal Deposit Insurance Corporation, the Federal Saving and Loan Insurance Corporation, and the Home Owners' Loan Corporation.

Not all the corporations formed by the Federal Government have been for distinctly emergency purposes. Some have been formed to develop natural resources and to regulate private enterprise. It was for this purpose that the Tennessee Valley Authority, mentioned in the preceding chapter, was formed. The Electric Home and Farm Authority, Inc., was formed under the laws of Delaware for the purpose of making feasible the increased use of electricity in homes and on farms, which purpose was to be accomplished by seeking to improve the quality, decrease the cost, and finance the consumer's purchase, of electrical appliances. Under the incorporation laws of Tennessee, the Tennessee Valley Associated Cooperative, Inc., was created to promote, organize, establish, manage, finance,

coordinate, and assist in any way whatsoever the development of cooperative enterprises in the Tennessee Valley Authority area.

The Federal Government has used the corporate form of organization sufficiently to demonstrate its suitability for conducting government enterprises. The principal merit of such organization in this direction is that it permits quicker and more direct action in conducting an undertaking than is possible when the customary governmental channels are used with their inflexible rules, regulations, and red tape. In these enterprises there are also possibilities for reducing the direct burden of government financing, since funds for at least a part of the corporations' activities may be obtained through sale of bonds to the public.

#### IV. BUSINESS TRUST

Least important among the forms of business organization is the business trust. Although its exact legal status is somewhat uncertain, the idea on which it rests is sufficiently distinct to justify brief consideration of it as a basic form of organization.

Medieval churchmen are credited with inventing the idea of a trust arrangement. In their times, the State was fearful lest the Church, with its perpetual life, would accumulate so much wealth as to become more powerful than the State itself. To prevent this the State placed restrictions on the rights of individuals to will their property, especially land, to the Church. In order to evade these restrictions on acquiring income from the ownership of property, churchmen devised the plan of having their parishioners will property to a friend for the benefit of the Church. Thus, a distinction developed between the legal title to the property and the use or benefit derived from the property itself.

The trust arrangement has come to be used for other purposes. A court may place the property of an incompetent person "in trust" by appointing a trustee, to whom the legal title of the property is transferred. The trustee, which may be

a trust company, is charged with the responsibility of administering the property for the benefit of the incompetent person, who comes to be known as the "beneficiary" of the trust. The intention is the same when a person, by will, leaves property in trust for heirs. Originally investment trusts were founded on the same principle. By agreement persons placed funds with a trustee to be invested by him for their benefit. The title to the securities was in the name of the trustee, but he was accountable to the beneficiaries for the income and was required to follow the instructions of the trust agreement in making the investments. A distinctly different purpose prompted the holding trusts of the eighties, arrangements by which the legal title of stock in different enterprises was transferred to trustees, so that they would have voting control over a group of concerns. The resulting monopolistic combination was often in a position to exploit the public and ruthlessly destroy competitors, as did the Whiskey and Standard Oil Trusts of the period. It was this type of trust which gave rise to the anti-trust laws designed to protect competition.

Business trusts in the manner that they have developed in this country are used mainly, but not entirely, for undertakings involving real estate, and are most prominent in Massachusetts. Fear of landholding corporations with perpetual life led that state practically to prohibit the use of corporations for holding, developing, and managing real estate. To carry on such activities other forms of organization had to be used, and the business trust was used to meet the situation. Consequently it is sometimes called "Massachusetts Trust" or "Real Estate Trust." It is not, however, used exclusively for dealing in real estate even in Massachusetts. For example, the Massachusetts Gas Company is a trust formed for the purpose of furnishing coal, gas, and their by-products to Boston and other New England communities.

As a form of organization the business trust is somewhat of a cross between a partnership and a corporation. Like a partnership, it comes into existence through an agreement, which is a voluntary contract between the investors and the persons

chosen as trustees. But unlike the partnership, the individual investors do not jointly own and control the management of the undertaking. Legal title to the property is held by the trustees, who issue certificates of beneficial interest to the investors. These certificates are similar to shares of stock and can be transferred freely without the consent of the other investors. The control of the property is in the hands of the trustees, subject to the general instructions contained in the trust agreement. Unless the trustees have complete control, the courts have held the business trust to be a partnership in which the investors have delegated authority but remain individually liable for all the debts of the enterprise. If investors have divested themselves of control, their financial liability is usually limited to their investment. The life of the organization is not so uncertain as that of the partnership, nor is it perpetual, as the corporation. State regulations vary concerning the period of time for which agreements of trust can be made; twenty years is the limit in some instances. At the end of the period a new agreement must be made if the activity is to be continued.

#### QUESTIONS

1. What is the most important form of business organization in this country?
2. "The advantages and disadvantages of any form of organization depends largely on the point of view." Evaluate this statement.
3. "With the individual proprietorship, the law recognizes no distinction between the proprietor and the business." What is meant by this statement and of what significance, if any, is it?
4. What circumstances account for the individual proprietorship being the most widely used form of organization?
5. What are the most serious limitations encountered in the use of the individual proprietorship?
6. Compare the individual proprietorship and the partnership with respect to their leading features?
7. Under what circumstances are partnerships especially useful forms of organization?
8. What is meant by individual proprietorship and partnerships being personal forms of organization?
9. "Personal forms of organization are necessarily fragile." Is this statement valid?

## 48 BASIC TYPES OF BUSINESS ORGANIZATION

10. Why is the importance of the corporation not adequately reflected by the number of such enterprises?
11. How do corporations come into existence?
12. What accounts for the variety of shares corporations issue?
13. Can shareholders withdraw their investment from a corporation in a manner similar to that in which a partner can withdraw his investment from a partnership? Explain.
14. Compare the corporation with the personal forms of organization with respect to the opportunity for efficient management.
15. What circumstances account for the importance of the corporate form of organization?
16. To what may be attributed the use of corporations as means of conducting governmental activity?
17. What is meant by the business trust?
18. Under what circumstances have business trusts been used most extensively?
19. Distinguish between a business trust and a holding trust.
20. What is meant by the statement that a business trust is somewhat of a cross between a partnership and a corporation?

## CHAPTER III

### PRODUCTION

#### I. MEANING OF PRODUCTION

IN A broad sense production is the process by which human effort and ingenuity are combined with the resources of nature to provide for human wants. Within this process emphasis is frequently placed upon two distinct but closely related aspects: the acquiring of money, and the creation of goods.

##### A. ACQUIRING MONEY

When money plays an important part in the productive process, it is not surprising that the success of individuals and of enterprises alike is judged mainly by their "money-making" ability and that even production is often viewed as the acquisition of money. When production is viewed from this standpoint, there is frequently little or no discrimination as to the ways in which money is acquired; yet not all profit-making methods contribute to increased general prosperity.

*Through Payment for Service.* Of all the ways in which money may be obtained, the most essential for the operation of the economic system is as compensation for the performance of services. It will be recalled that the traditional policy of *laissez faire* assumed that individuals would benefit in proportion to the service rendered, and, while the benefit need not be in money, this is the most likely form for it to take. This aspect of acquiring money will be considered presently in further detail.

*Through Curtailment of Output.* When acquiring money becomes the test of productive activity, there are other recognized ways of making money than by furnishing the goods which society wants and needs. Individuals have long realized that they could obtain higher prices for their goods if they

could curtail the volume available to buyers. Despite the lip service given to competition, producers have been eager to curtail it with respect to the things they sell. Since a monopolistic position in the market is likely to be more profitable than a competitive one, efforts are made to curtail output for individual gain. The trusts of the eighties were intended to restrict rather than expand the volume of output, and even today some of the activities of prominent enterprises, such as the Aluminum Company of America, appear to be prompted by the same considerations. Through apprenticeship regulations, high membership dues, and other devices, labor unions have deliberately sought to create a scarcity of labor in particular trades so that high wages therein might result. Under government subsidies, farmers have been encouraged to curtail the size of their crops.

*Through Destruction of Output.* Not only may money be acquired by withholding goods from the market, but also by destroying the goods which have come into existence. In this country, cotton growers have been encouraged by government subsidy to plow under growing cotton, and hog raisers have been urged to kill the young animals, thus reducing the future volume of goods. Fruits and vegetables have been allowed to rot on trees and vines. Low prices of milk prompted dairymen to pour their milk into highways at the same time that a government official asserted that the proper consumption of milk for an adequate diet called for an "increase of approximately 70 per cent, or 15,000,000 head of dairy cows."<sup>1</sup> Within two years or so, Brazil destroyed approximately 3 billion pounds of coffee having a value of about \$200,000,000, which means that about a full year's world consumption was burned or dumped into the sea. In Japan, after 720,000 fine pearls were shoveled into a furnace and destroyed, the price of pearls is reported to have increased about 30 per cent.

*Through Other Forms of Exploitation.* In addition to the curtailment and destruction of output, there are numerous other ways in which particular individuals and groups are able

<sup>1</sup> *Business Week*, March 31, 1934.

to exploit others who are unable for various reasons to protect themselves. There is no clear-cut distinction between fair and unfair, legitimate and illegitimate activities, but rather there is considerable blending. Many of the activities which are sometimes designated as "fair but shrewd" or "clever but legitimate" make downright theft respectable as a means of acquiring money. Even seemingly reliable concerns engage in practices which justify the designation "rackets" and bring forth such criticisms as are popularized in *100,000 Guinea Pigs* and *Partners in Plunder*. Abundant evidence of this is found in the testimony of business men themselves as set forth in the hearings of the one-time National Recovery Administration. In criticizing the actions and practices of competitors, business men began tramping on one another's toes, with the result that more dirty linen was disclosed than was intended for public exhibition.

While the numerous ways in which exploitation aids in acquiring money cannot be considered here, a few illustrative cases may be noted. Recent investigation of wartime profits of steel, munitions, shipbuilding, and other kinds of business disclose that concerns have not only expended large sums to defeat disarmament legislation, but have actually encouraged wars by offering assistance in financing a conflict. Employment of child labor, requiring long hours of work, failure to provide safe and sanitary working conditions, are some of the ways in which enterprises can make money for their investors and management at the expense of the workers. With the aid of advertising, inferior, deceptive, and even injurious products can be made extremely profitable to those who furnish them.

#### B. PRODUCING GOODS

Despite the many and devious ways in which individuals may acquire money, their real interest is not in the money itself. While misers derive pleasure from merely seeing and feeling money, most persons do not desire it for its own sake; they want it as a means to an end. The possession of money enables them to obtain the goods by which human wants are satisfied, and it

is the creation of these goods which is the fundamental purpose of the productive process.

*Production of Commodities.* Of the various things for which money is spent, commodities constitute an important part. Necessities, comforts, and luxuries of life all call for physical products. Food is needed to sustain the body, while clothing and houses serve to protect it under climatic conditions. To these fundamental requirements must be added many articles which increase the pleasures and satisfactions of life, such as furniture, automobiles, and radios. One cannot go far even in the enjoyment of leisure without such material things as golf balls, tennis rackets, novels, etc. Whether these commodities serve basic needs or merely passing whims, they are seldom furnished directly by nature. The important forces which nature furnishes must be directed and harnessed by man in order that the particular things he wants may be available under such circumstances as he desires.

(a) *Agriculture.* Among the basic commodities are agricultural products. Without any activity on the part of man, the forces of nature create under favorable conditions plant life of some kind. These forces may not, however, bring forth the particular forms of plant life which man wants. Thistles may grow where corn is wanted. Here man plays a part in the productive process, since he can direct the forces of nature to serve him. He can, for example, "produce corn" by using the energy and facilities at his disposal to create conditions favorable for the growth of this crop. To this end he cultivates the land, fertilizes it, and plants seed corn. Through such activities, the forces of nature are converted into the crop he wants, rather than into the weeds he does not want. Similarly, nature creates animal life without the assistance of man, who, however, may want particular kinds of animals in larger quantities than would be furnished by nature alone. Thus a farmer may be a "hog producer," which means that through his activities favorable conditions are created for the breeding and raising of this particular kind of animal.

(b) *Mining.* While agricultural activities center around

directing nature's forces so that they will create particular forms of organic life, these activities alone do not furnish all the basic materials which man has found useful. Through millions of years nature has been creating such inorganic substances as coal and oil. In the course of time, man discovered their existence and ways in which they could be utilized to his advantage. But mineral resources are not furnished by nature under conditions which make them immediately available for the purposes to which man seeks to apply them. When an enterprise specializes in "producing coal" it does not create the mineral, but merely furnishes the facilities by which the resource is extracted from the earth, freed from foreign substances, and graded into usable sizes. Through these processes the natural resource is converted into a commercial product capable of serving man in ways which would have been impossible had the mineral remained in its original form. The services thus performed become embodied economically in the product, just as the services of farmers become embodied in the products they furnish.

(c) *Manufacturing.* Some of these products coming from farms and mines are in finished form so far as the requirements of ultimate consumers are concerned. This is the case with fresh fruits and with coal. But in other cases the products are merely raw materials on which further operations must be performed before they can be converted into such useful forms as shoes, beverages, or locomotives, etc. These fabricating operations conducted in factories, mills, and plants come to be known as manufacturing. Broadly speaking, manufacturing centers around either or both of two fabricating processes. In some instances basic products are broken down or separated into a variety of products. This occurs in the "cracking process" employed in refining petroleum, so that the natural resource is made to yield such products as gasoline, kerosene, or lubricating and fuel oils. In other cases, different basic materials are combined into a new product, as in the manufacturing of steel. Under intense heat two natural resources — iron and carbon — are combined by melting. The resulting product is

extremely hard and can be used for purposes, such as the making of rails, where neither iron nor carbon could be used separately. Frequently the breaking-down and the building-up processes are combined. Dairy establishments extract butter and cream from milk on the one hand, and, on the other, combine cream, sugar, and other products into ice cream. But whatever the particular process may be, the fundamental nature of the performances is the same as with farming and mining. Through deliberately organized effort, those facilities are furnished by which the forces and gifts of nature are made to serve better the wants of man. In an economic sense, these processes and services become embodied in the finished product.

(d) *Construction.* In their economic character those activities generally known as construction and building are not essentially different from manufacturing. Both fall under the general heading of fabrication. In boring under the Hudson River to construct a tunnel, in building the Oakland-San Francisco bridge, in paving the Lincoln Highway, in erecting homes, stores, warehouses, and factories, the raw materials are merely being used for different purposes than if they were employed for building boats, making locomotives, or weaving cloth. The fundamental nature of both manufacturing and construction is one of converting raw materials into finished products. This process is not changed by the fact that construction usually occurs at the place where the finished product is wanted and manufacturing occurs at centralized locations, to which raw materials are transported and from which finished products are shipped to the places where they are wanted.

Incidentally the distinction between raw materials and finished products generally relates to a particular industry, stage, or process. For example, iron ore is the finished product of mining, but is the raw material for blast-furnace operation, the finished product of which is pig iron. This in turn becomes the raw material for steel mills, which first convert it into steel ingots and then into finished products such as plates and girders. These again are merely raw materials for further fabri-

cation, until a product finally emerges which is serviceable to ultimate consumers.

In short, the part which organized business plays in the production of commodities, whether raw materials or finished products, is that of performing useful operations. Whether in agriculture, mining, manufacturing, or construction, the activities of man do not create the basic substances of which commodities are made. These are furnished by nature. Human activity serves merely in directing Nature's forces and in converting her products into particular goods which are, or are believed to be, especially useful to man.

*Production of Services.* Important as commodities are for the gratification of human wants, the productive process frequently does not end with the creation of physical goods. Not until commodities reach the hands of consumers can their production be said to be complete in an economic sense. Until this point has been reached, the usefulness of the products has been potential, but when they reach ultimate consumers their economic creation is complete in so far as consumption is the goal of production. However, in a broad economic sense the productive process is never complete — it has neither beginning nor end. If the individuals were only consumers, then the process might be said to end when commodities were made available for consumption. But individuals are also producers, and much of their consumption is made necessary by their activities as producers. The tools of the mechanic and the books of the lawyer represent consumable goods used for further production. In so far as individuals consume things, not for the enjoyment of them, but as an aid to production, their consumption is merely a stage in the never-ending process of production. For present purposes, however, it will be convenient to consider the process at least temporarily complete when goods reach the hands of ultimate consumers.

(a) *Merchandising.* One reason many services must be performed in addition to those required for the physical creation of products is that their creation occurs largely in anticipation of the demand for them. Customers seldom foresee their require-

ments. Rather, they wait until they are ready to buy shoes, suits, radios, or other articles and expect to find what they want available on the market. Business concerns have also come to purchase their supplies largely on a short interval basis. Even when customers do anticipate their requirements to some extent, as in purchasing custom-made clothing, the necessity for the merchant to anticipate their demands is not appreciably reduced beyond the actual making of the garments. Customers do not expect to wait until the sheep are raised; their wool sheared, carded, and spun into yarn; and the cloth woven from which the garment is to be made. On the other hand, it is often impossible or uneconomical to produce commodities only as they are wanted. The dependence of agriculture on climatic conditions makes seasonal production of crops unavoidable. In many lines of manufacturing it would not be economical to start and stop operations as individual orders were received.

When commodities are created in anticipation of the demand for them, the estimation of what will be wanted becomes an important part of the productive process. Retailers, jobbers, wholesalers, manufacturers, and suppliers of raw materials are all faced with a common problem in varying degrees. In some cases estimates must be made only days in advance of the time required, but in other cases months or even years are needed. In any event, the performance of this service requires special activities and facilities designated to detect tendencies in consumption. Trade journals and other business publications furnish valuable clues. Many concerns establish departments or employ agencies to study and report market developments. Even though manufacturers and others having goods to sell may influence the choices of consumers, this does not eliminate the necessity for estimating what consumers can be induced to buy even before the consumers themselves know what they will want.

Furthermore, it is necessary to have commodities available when they are wanted. In part, the problem here is estimating the time when commodities will be wanted, but in particular it involves providing the necessary facilities for furnishing

goods promptly. For some commodities, such as bread, there is a fairly stable demand which permits a continuous flow of the product to the consumer. But not so in all cases, and especially not when production is dominated by seasonality. Because vacations are generally taken during the summer months, cameras and films are among the commodities for which demand swells at that time. Home-owners think of coal, oil, and other fuel when the chilly days of fall begin to make unheated homes uncomfortable. From then on fuels are purchased from time to time, depending upon the severity of the weather. Just before school begins there is a great demand for children's clothing and school supplies.

The facilities and services which are required to furnish goods when they are wanted may be supplied in various ways and constitute a part of the productive process. In so far as commodities are in a finished form, the task is primarily that of storage. Facilities for this may be comparatively simple, such as lumber yards, or may be more elaborate, such as grain elevators, cold storage plants, general warehouses, and retail stores. In any event, the ownership and operation of these facilities is irrelevant so far as the productive nature of the service is concerned. A manufacturing establishment may have its own storage facilities, or it may dispose of its wares promptly to wholesalers, jobbers, and retailers who perform the service of holding the goods until they are wanted by consumers. To the extent that storage is necessary for the accommodation of customers, it is a distinctly productive service. It becomes embodied economically in the physical goods even though it neither changes the form nor increases the quantity of the products.

(b) *Transportation and Communication.* Along with the services which make commodities available when wanted are those by which products are supplied where they are wanted. To only a limited extent are products used where they are grown, mined, or manufactured. Farmers may raise crops and cattle for their own use and a manufacturing establishment may produce some of the equipment it needs, but most commodities

are intended for sale, and require transportation services of some kind. The mere physical existence of automobiles at Michigan factories means nothing to prospective buyers in Florida.

There are, of course, various ways in which transportation services may be rendered. Commodities may be carried on the backs of either man or beast, or they may be moved by trains, trucks, pipe lines, vessels, or aircraft. In some cases the concern which furnishes the commodity may also provide the facilities for its shipment. Thus a lumber company may not only engage in cutting timber and converting it into lumber of various kinds but may also own and operate vessels by which the product is hauled to its market. For the most part, however, transportation facilities are furnished by companies organized especially for this purpose, such as railroads, truck companies, and steamship or air lines.

The furnishing of passenger transportation is a type of productive activity of the same nature as the rendering of freight transportation. Much of this occurs in connection with the purchase and sale of commodities. The services so rendered become embodied economically in products just as truly as do the freight services rendered in transporting the physical goods. But even when travel is for pleasure, the services rendered are no less productive than when they are furnished for business travel. In so far as transportation contributes to the satisfaction of human wants, the performance of this service is productive in nature.

Closely allied with transportation, and sometimes considered a part of it, is the transfer of messages and entertainment. This is generally referred to as communication. Through telephone, telegraph, and radio broadcasting facilities the availability of commodities is greatly increased. The willingness of merchants to carry more diversified sizes, shapes, styles, patterns, and colors of merchandise is influenced by the quickness with which rapidly selling items can be replenished. A retail store running short of a certain shade of woolen yarn in heavy local demand can communicate within a few minutes with a jobber, whole-

saler, or manufacturer who may be miles away and in less than a day additional supplies may be in the store. The radio broadcast of weather reports enables farmers to harvest and otherwise care for their crops more intelligently than would be possible without it. Rapid communication enables the re-routing of fresh fruits and vegetables from their original destination where a glutted market exists to another point where there is a shortage.

(c) *Servicing of Commodities.* Even after products reach the hands of consumers, there may be need for servicing them in order to maintain or extend the period of their usefulness. This occurs only with rather durable commodities or those which, unlike candy or tobacco, are not consumed quickly. Thus shoes are repaired, clothing laundered, hats renovated and automobiles reconditioned. Enterprises furnishing such services are engaged in production no less than those which furnished the products originally.

(d) *Advertising.* There is increasing controversy as to whether or not advertising is an essential activity in the productive process. Most of the criticism to which advertising is being subjected does not indicate that advertising is unnecessary, but that the prevailing type is unsatisfactory in performing the two services which are needed. Under modern conditions, there is a service to be performed by calling the attention of persons to the existence of certain needs on their part and another service to be performed by informing them reliably how available goods can meet their needs and desires.

While many needs of individuals and enterprises have long been recognized, there are others whose existence is not realized or at least not sufficiently to prompt such action as is necessary to meet them. Only within recent years has it been realized that noise materially reduces the working efficiency of individuals. Changes in working conditions have been accompanied by such changes in the kinds of food eaten, so that increasing need has arisen for care of the teeth and gums. With the increasing use, speed, and power of automobiles there has come to be greater need for substantial tread on tires, for

more dependable brakes, and for properly focused lights. Advertising which calls attention to genuine needs performs a true public service.

Furnishing information as to how needs and desires can be met most satisfactorily is a no less essential form of advertising. Patrons of theaters are served by public announcements as to where and when pictures and plays may be seen. The city of New York has a service which furnishes information on market conditions for food in the city. By daily radio announcements the public is informed as to the commodities which have come into the city in such quantities that their prices are likely to be low, and also as to those commodities which are likely to have high prices that day because of scarcity. This permits housewives and others buying food-supplies to plan their purchases more economically and to buy more advantageously than could be done without such service.

Commercial advertising at present is conspicuously defective in performing these services. By using such impulses as fear, love, and imitation, many imaginary needs have been developed, mainly, if not entirely, to the advantage of the advertisers. After reading competitive advertisements of automobiles, a prospective purchaser finds little if any reliable information by which he can judge the relative merits of cars. Inconsequential gadgets are proclaimed as revolutionary improvements; exclusive features are likely to be found on other makes but known by different names; the conspicuously quoted price in an advertisement may not apply to the model which is pictured and described. In short, publicity has come to be an essential activity in the productive process, but comparatively little of it is of the constructive type employed by the Metropolitan Life Insurance Company in calling attention to means of protecting health and extending life.

(e) *Financial Services.* Money and credit are useless to individuals stranded on a barren island, but not so to producers and consumers in a highly organized business world, where these financial resources are as essential to the smooth and efficient conduct of business activity as oil is to the operation of machin-

ery. Their part will be considered at length in subsequent chapters.

(f) *Personal Services.* Individuals and organizations frequently do not furnish commodities, nor even assist directly in doing so, but rather render services directly to consumers. The maintenance and the restoration of health call for services of physicians, dentists, nurses, and hospitals. Opportunities for employment are often furnished through employment agencies; the purchase and sale of property may be aided by the services of brokers; the services of musicians, singers, actors, and directors contribute to entertainment; travel agencies furnish information as to places of interest and make arrangements for the convenience of travelers; the orderly conduct of business and other relations calls for the services of legislators, administrators, courts, arbitrators, etc. Education calls for a wide assortment of teachers and writers; the maintenance of personal appearance requires the services of barbers, hair-dressers, manicurists, and bootblacks. Cooks, porters, and domestic servants also fall within the group whose productive activity consists in the rendering of personal services.

It may seem strange to place the housemaid in the same group as the physician and to include those individuals and enterprises rendering personal services along with the concerns furnishing commodities. Very often production is viewed as the creation of physical products, and for some purposes this restrictive use of the term is convenient. But such use often leads to erroneous conclusions with respect to other types of activities. A manufacturer may find it convenient to designate his mechanics as "productive" and his other employees as "unproductive" labor. So used, these terms generally distinguish those who work directly on the creation of a physical product from those whose services are indirect, as are those of the tool-room clerk. But whether the work is direct or indirect, it is productive in nature if it serves a useful purpose. This same test of production applies to the activities which, instead of being embodied in useful physical products, contribute their benefits directly to consumers as personal services. Both types

serve man in the satisfaction of his wants, and in doing so become a part of the productive process.

*Creating Conditions for Leisure.* An aspect of the productive process which has as yet received little attention is the creation of opportunities for leisure. In the past, leisure was not viewed as an objective of production, but as a limitation to it. This is not surprising, because shortage of goods made long hours of work unavoidable. Even by working from dawn till dusk, man formerly was not able to produce more than enough to meet the fundamental needs for food, clothing, and shelter. As long as most persons were not beyond the poverty line, or even perhaps the point of starvation, they were not interested in leisure except to the extent necessary for bodily rest. Their interest centered primarily in creating the goods which served their bodily needs. Under the whip of necessity work in itself became a virtue for all except the wealthy.

The opportunity for leisure came with the increased possibilities for production. For centuries man knew little about the forces of nature, and was fearful lest he incur the wrath of the gods by seeking the fruits which the tree of knowledge might yield. Not until the sixteenth century did such men as Francis Bacon, Galileo, Kepler, and Newton blaze a new trail. They defied the gods of superstition and exposed themselves to punishment in order to study nature through experimentation. In this way, the door was opened to experimental science, by the application of which rapid strides have been made during recent years in understanding and using the forces of nature. One result has been that a vastly greater production of goods has become possible with diminishing human effort.

Greater leisure, however, is not a necessary consequence of increased possibilities for producing goods. In the first place the possibilities may not be utilized. There are reasons, as will be noted later, for believing that there is a considerable gap between potential and actual production. When existing facilities and capacity are not fully used, the opportunity for leisure is reduced. In the second place, individuals may prefer to have more goods rather than more leisure. Ordinarily the desire for

leisure increases as the opportunity for material comfort expands. Workers who are struggling to support their families are likely to be more interested in higher pay than in shorter hours of work, but when the pressure of dire necessity is relieved by larger income, the attractiveness of leisure increases. When in collective bargaining workers ask for shorter hours and the same pay rather than the same hours and more pay, they are expressing a preference for the benefits of leisure instead of the benefits of more consumption through larger incomes. This does not mean that their present income furnishes all the goods they desire. In fact, human wants are like a snow ball rolling down hill — constantly increasing. The choice does indicate, however, that they anticipate more enjoyment from additional leisure than from the additional goods which larger income would furnish.

Not only have there come to be opportunities for leisure, but increasing need for it. Aside from humanitarian considerations, it is well to realize that the efficiency of human beings is often materially diminished by inadequate leisure for restoration of mental and physical energy. Important also is the restriction placed on the market for an increasing range of goods by the absence of leisure. Time is required for consumption as well as for production, and unless individuals have opportunities for consumption, their buying is confined to the necessities of life. A number of years ago Henry Ford recognized that long working time restricted the automobile market. With workers employed twelve hours a day, six days a week, they had insufficient time to travel and were too tired to do so. Under these circumstances individuals used a car so little that even a low-priced car was a luxury. The market for clothing is also influenced by the leisure time in which persons can spend in pleasure. At the present time, the production of many goods is reaching a point where consumption is restricted through limitations of leisure. In self-protection, groups of business enterprises may find provision for increased leisure essential in order to extend, or even to maintain, the market for their commodities and services.

## II. MEASUREMENT OF PRODUCTION

Before turning to the growth of production, brief consideration of the major methods and supplementary aids employed in estimating growth may be helpful.

## A. MAJOR METHODS

The conditions and circumstances under which production generally occurs are such that different methods of measuring its extent have come to be employed. When goods are exchanged extensively for money, not only the quantity of goods created becomes important, but also their value. Both criteria are not equally well suited for all purposes, and they frequently show opposite results. This is illustrated by the conflicting headlines as to automobile production in January, 1934. Based on Department of Commerce figures, one newspaper reported "January Auto Sales Down," while another reported "Automobile Factory Sales Up in January." These seemingly contradictory statements as to automobile production arose from the fact that there had been an increase in the number of units sold to dealers, but a decrease in value of cars delivered to consumers.<sup>1</sup> The possibility of diverse results greatly increases the importance of measuring production by both volume and value for many purposes.

*Volume.* The quantity of virtually all commodities and many services are capable of being measured in physical units of one kind or another. In some cases counting alone is sufficient, as with cattle, eggs, automobiles, and houses. Equally well known is the measurement of coal in tons, wheat in bushels, oil in gallons, lumber in feet, diamonds in carats. Particularly for reference to services, specially designed units have been necessary, such as ton-miles for freight transportation, kilowatt-hours for electricity, and agate lines for advertising space.

Despite the importance of physical measurement of production, this method is beset by two important limitations. One

<sup>1</sup> *Time*, March 12, 1934.

is that it cannot be employed conveniently and satisfactorily for all types of production, especially for services. Only by using extremely complex units of measurement can the services of telephone companies and broadcasting stations be estimated. But even complex units are not available for measuring many personal services rendered directly to consumers, such as those made by lawyers, physicians, teachers, and domestic servants. A second limitation to the physical measurement of production is that physical units do not permit combined measurements of different commodities, to say nothing of services. Tons, gallons, feet, and bushels are unlike units and cannot be combined into a total figure. Consequently, no direct measurement of all manufacturing is possible on a physical basis. Similar difficulties are encountered with services. It is meaningless to combine figures showing the volume of passenger traffic with those for freight traffic in order to estimate the aggregate volume of traffic, because the one is measured in passenger-miles and the other in ton-miles.

*Value.* The most serious limitations of physical measurement can be avoided by measuring production in terms of value. Such measurement uses the monetary unit as a common denominator, which in this country is the dollar. On this basis, most services as well as commodities can be measured with varying degrees of accuracy and comparisons can be made. Thus the value of freight transportation can be compared with that of passenger service, and the value of telephone service can be compared with the value of cement. Even more important for many purposes is the possibility of combining the values of various commodities and services regardless of the physical units in which they are sold. Thus it is possible to estimate the combined values of mining, forestry, fishing, agriculture, manufacturing, construction, and distinctly service activities.

While this method of measuring production overcomes the major difficulties encountered with physical measurement, it also has several important limitations of its own. One of these is that it does not furnish a reliable guide to the volume of physical production. If the prices of particular goods, say

cement, remained the same, changes in the total value would then reflect changes in the quantity produced. But prices are constantly changing in response to the forces of demand and supply, with the result that the volume of production may be increasing and the value declining, or the reverse. As an indicator of volume, value is also an unreliable guide for production in general, since between different periods of time the dollar is not a stable unit of measurement like the ton, bushel, or gallon. The monetary unit buys a larger aggregate quantity of goods at one time than at another. The resulting situation is as though a yard measured 36 inches at one time, 24 at another, and 48 at still another, which would cause the same piece of cloth to measure 10, 15, or  $7\frac{1}{2}$  yards, depending on how long the yard happened to be at any particular time. Only when the general level of prices is fairly stable do changes in the value of aggregate production reflect changes in its volume.

Another limitation is that in combining the value of goods extreme care must be exercised to avoid counting a commodity more than once. For example, the value of bread includes the value of flour, and the value of flour includes the value of wheat. If, therefore, the total values of wheat, flour, and bread are added together a much exaggerated total would result. The same difficulty on a larger scale develops in estimating the production of manufacturing industries. Their total sales cannot be used to represent the value of their production, since the costs of raw materials and supplies are included. In estimating the value which productive operations have created, the Bureau of the Census has for years deducted those items which most obviously represent duplications in obtaining the "value added by manufacturing." This figure approximates the value of production alone. At times there is deliberate double counting, as when an industry attempts to show its own economic importance by calculating its total sales plus the value of the products of industries which depend on it as a market. In this computation the value of the products has been already erroneously included once in the total value of sales and is now included again as a separate item.

#### B. SUPPLEMENTARY AIDS

Whether physical or monetary units are employed in measuring the extent to which goods are produced, complete measurement is almost impossible even in particular lines of business, to say nothing of business in general. Even if complete information could be obtained, so much time would be required in the process that many of the needs for the information would have passed before the results of the inquiry would have become available. Consequently supplementary aids are frequently employed.

*Indicators of Production.* For many purposes, knowledge as to the exact amount of goods in the stream of production at any given time is less important than information as to the changes which are occurring in its direction and speed. In so far as interest centers on changes which are occurring these can be detected by watching a comparatively few representative activities which indicate the course of events. Thus the probable future activity in construction industries may be estimated by the value of contracts awarded, while an indicator of manufacturing activity is factory employment and the size of payrolls. Among other business indicators is steel ingot output, electric power generated, car loadings, and bank clearings. But just as any one straw is likely to get caught in an eddy or backwash and be moving in the opposite direction to the main stream, so any single indicator is often misleading as to the general tendency of production. For this reason, a number of straws are frequently bound together to form composite indicators. If the items included in such an index are sufficiently numerous and representative, the resulting average will reflect with reasonable accuracy changes of a more general character.

Of course all indexes are not equally satisfactory for all purposes, since each is designed to show a different state of things. Some are intended to reflect changes in particular branches of business, such as agriculture, while others are more comprehensive and include all types of business activity, as does the index of production and trade published by the Federal Reserve Bank of New York. On the other hand, some are designed to

reflect current changes and are sensitive to events as they occur from day to day, as do bank clearings, while others are intended to indicate longer and more fundamental changes, as do indexes of basic production. Consequently, in using indicators care must be exercised to select those which reflect conditions bearing directly on the problem at hand.

*Index Numbers.* Not only is the total amount of production less important for many purposes than changes which are occurring from time to time, but the actual amount of the change is often less important than the degree of change. Whether production in general or in particular lines is measured by volume or value, and whether the output is measured completely or estimated by indicators, the figures can be reduced to index numbers. This is illustrated for potato production in the following table:

TABLE 2. POTATO PRODUCTION

Year	Volume		Value	
	Bushels in Millions	Index Number	Dollars in Millions	Index Number
1929 . . . . .	328	100	431	100
1930 . . . . .	333	102	305	71
1931 . . . . .	373	114	173	40
1932 . . . . .	358	109	141	33
1933 . . . . .	320	98	264	61
1934 . . . . .	385	117	199	46

In computing index numbers the first step is the selection of a "base period." Any convenient span of time such as a day, week, month, year, or longer period may be used. For many purposes a year is the most satisfactory span. In the above illustration the year 1929 is used as the base. While any period may be chosen, it is customary to select one which will be especially useful for the purpose which the index is to serve. During and immediately following the World War the year 1913 was widely used as a base period. Later 1926 came to be used extensively, although for many comparisons 1929 has now come to be used. When the base period has been

selected, the production therein is represented by the figure 100 and the production in other years is expressed as a percentage of that in the base period. Thus in 1929 the production of potatoes amounted to 328,000,000 bushels with a value of \$431,000,000, and the index number for each is 100. In 1934 the index number for volume is 117 as against 46 for value. This means that in 1934 the volume produced was 117 per cent as much as in 1929, whereas its value was only 46 per cent as much as in the base period. Expressed differently, volume was 17 per cent higher and value 54 per cent lower than in 1929.

Since index numbers show merely relative changes in production, the numbers for different commodities and services can be combined to obtain a composite index number. In combining these numbers, the importance of the various items must be determined. This is a technical problem known as "weighting" and need not be considered for present purposes. It is sufficient to realize that if there had been a ten per cent increase in the production of platinum, of which there is only a small amount mined, this item should not be allowed to influence the composite index as much as a 10 per cent increase in the volume of iron, with its vastly greater actual amount. But when the various items are properly weighted, the composite index number is capable of showing the average change for numerous and widely different services and commodities.

### III. GROWTH OF PRODUCTION

In surveying the growth of production only those types of goods which lend themselves to measurement will be considered. Among the benefits resulting from man's activity which are thereby excluded are leisure, the services of housewives, and most of the services which individuals render to themselves, such as mowing of lawns, painting of houses by their owners, and raising flowers and vegetables in a home yard or adjacent lot.

#### A. PHYSICAL PRODUCTION

Even though production includes more than the creation of physical products, they are the items which generally receive the greatest attention, partly because they are so important for prosperity, and partly because they are relatively easy to measure. It will be helpful to consider first the combined course of production for the leading commodities since 1875, or shortly after the Civil War.

*Leading Commodities Combined.* During this period of more than fifty years, the general course of production has been upward but irregular. It advanced at one time, receded at another, then recovered lost ground, and advanced to a new high level. This is shown by the heavy solid line of Figure 1. Not until the depression of 1929 was a major setback experienced. Thus, the graph shows that production had increased nearly six-fold over that in 1875, the index number having risen from 100 to 681, or an increase of nearly 600 per cent. Following 1929, production declined sharply and was nearly 40 per cent lower in 1934 than in 1929.

Even though production increased nearly six-fold during a period of somewhat more than half a century, the rate of growth was slower than is generally assumed. The 1929 level was equivalent to that which would have resulted had production increased by about 3.7 per cent each year compounded. This is shown by the light lines spreading like rays from the circle of Figure 1. These indicate the course production would have followed if it had increased steadily at any one of the different rates indicated at the right of the figure. Actual production, as represented by the heavy solid line, is in 1929 nearly midway between the 3½ per cent and the 4 per cent lines of growth. Thus total production in that year was about equal to that which it would have been had it increased 3.7 per cent each year since 1875.

It will also be noticed that no spectacular leaps and bounds contributed to the aggregate increase in production. This is particularly noteworthy because many people are under the impression that during the World War and in the period immedi-

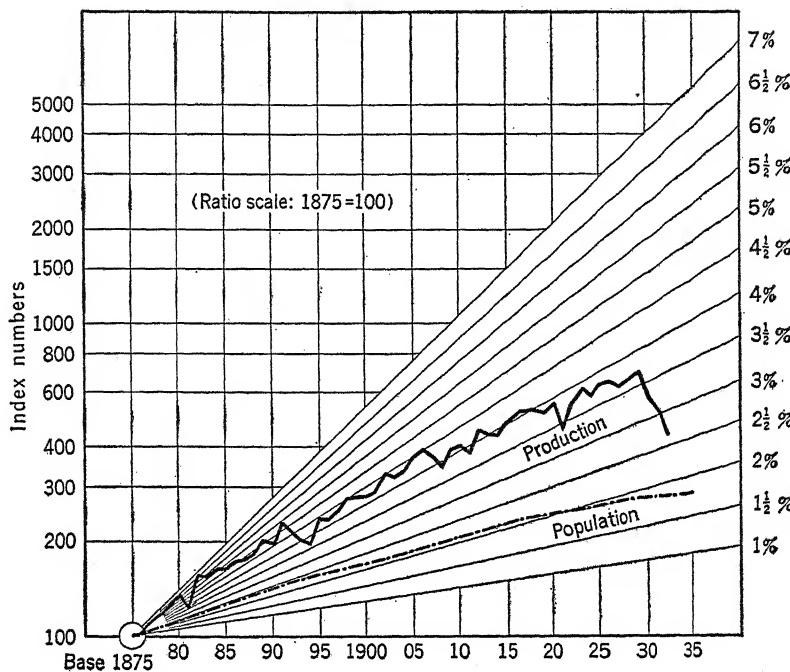


FIGURE I. PHYSICAL PRODUCTION AND POPULATION GROWTH

Adapted from *Forecasting Business Cycles* by Persons, published by John Wiley & Sons, Inc., with extension of data for years since 1930. Used with permission.

ately preceding 1929 production was growing at a phenomenal pace. The fact is that production was increasing faster in 1891 than at any time during the present century. Even during the World War, production increased at a rate of only 4 per cent as compared with  $4\frac{1}{2}$  per cent following the depression of 1907. However, at no time since the conflict has the speed of about 4 per cent, to which output was previously tending, been regained.

This rather persistent tendency for physical production to increase at a diminishing rate, and especially since the early years of the present century, may be the result of any one or more of several conditions. It must be realized that as production becomes larger the same percentage increase gives a larger and larger additional product. The situation is similar

to that of population growth. In 1870 our population was 40,000,000, while today it is about 130,000,000; an increase of 2 per cent in 1870 was only 800,000 persons, whereas a 2 per cent increase today means about 2,600,000. Similarly, a 3.7 per cent increase in total production in 1929 represents vastly more additional goods than a 3.7 per cent increase in 1875. One of the circumstances which might account for the diminishing rate of growth is the increasing difficulty which may be experienced in expanding production that has already reached large proportions. In addition, there has been a decline in the hours of work per week. Professor Paul H. Douglas has estimated the decline from an average of 58.4 hours in 1890 to 49.8 in 1926. However, the significance of both these explanations is materially reduced by the advent of important scientific developments of recent years. Another possibility is that with more adequate provision for the necessities of life the pressure for further production is relieved. This explanation would have considerably more weight were it not for the fact that human wants are not restricted to bare necessities for existence. The desire for comforts and luxuries as well as for necessities is capable of stimulating productive effort. Indeed a characteristic of human wants is that they tend to be indefinitely expansible. A third possibility is the failure fully to utilize productive capacity. Monopolistic practices by which emphasis is placed on the creation of values rather than of goods have been increasing, and may well contribute much to the explanation for the diminishing rate at which physical production has been growing.

But whether production is growing faster or slower than formerly, the importance of its speed depends somewhat on the speed at which population is increasing. If population increases faster than production, then lower standards of living are inevitable; but if production grows faster than population, then the way is opened for higher standards of living. Growth in population is represented by the heavy broken line in Figure 1. For the entire period since 1875,

population has increased at an average annual rate of about 2 per cent as against 3.7 per cent for physical production. Since the volume of commodities has been increasing faster, there have been increasing possibilities for higher standards of living.

*Growth in Major Economic Fields.* When the volume of physical production is broken down into its leading parts, the tendencies of growth are similar in some respects and different in others. With crops, minerals, and manufactures alike, there has been an irregular upward course until the depression of 1929. This is shown by Figure 2, which is constructed in the same way as the preceding one. These basic groups have

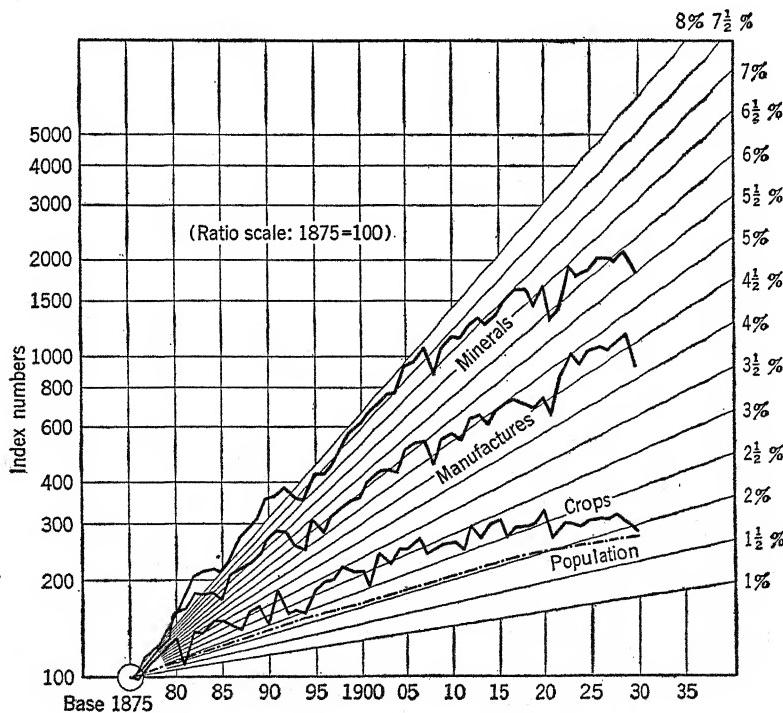


FIGURE 2. GROWTH IN MAJOR BRANCHES OF PHYSICAL PRODUCTION  
AND IN POPULATION

Adapted from *Forecasting Business Cycles* by Persons, published by John Wiley & Sons, Inc. Used with permission.

grown at distinctly different rates, although in each instance there is a tendency for the rate of growth to decline.

Crop production has lagged far behind both mineral and manufactured output. Agricultural products reached their peak in 1920, when the index number was 319 as compared with 100 in 1875. This was an increase of slightly over 200 per cent as against one of nearly 600 per cent for physical production in general. By 1929, when mineral and manufactured products were at their peak, the index for agriculture had fallen to 289 and has continued to decline. At the peak, farm products were increasing at an annual average rate equivalent to about 2.7 per cent as compared with 3.7 per cent for the combined products. But even this was above the rate at which population was increasing. By 1935, however, crop production had been curtailed to a point where it was not keeping pace with the growing population.

Mineral production is at the other extreme, having increased more than either crops or manufactures. Its index rose from 100 to 2130 in 1929, or an increase of more than 2000 per cent over the 1875 level. This stands in sharp contrast to nearly 600 per cent for physical production in general. At its high point in 1929, mineral output was equivalent to what would have resulted had production increased steadily at a rate of about 6 per cent a year. In earlier years it had been increasing more rapidly. But even at 6 per cent, it was growing about three times as fast as was population. Following 1929, minerals as well as other products experienced a drastic decline.

Manufacturing has held a position between crop and mineral production. By 1929 manufactures were about 1000 per cent greater than in 1875, the index number increasing from 100 to 1141, which is an increase nearly double that of crops, minerals, and manufactures combined. Manufactured output reached a record height in 1929 when it was equal to what would have resulted had there been an even growth of about 4.7 per cent a year since 1875. This is more than twice the rate of population growth.

*The Relative Size of Major Fields.* The widely different rates

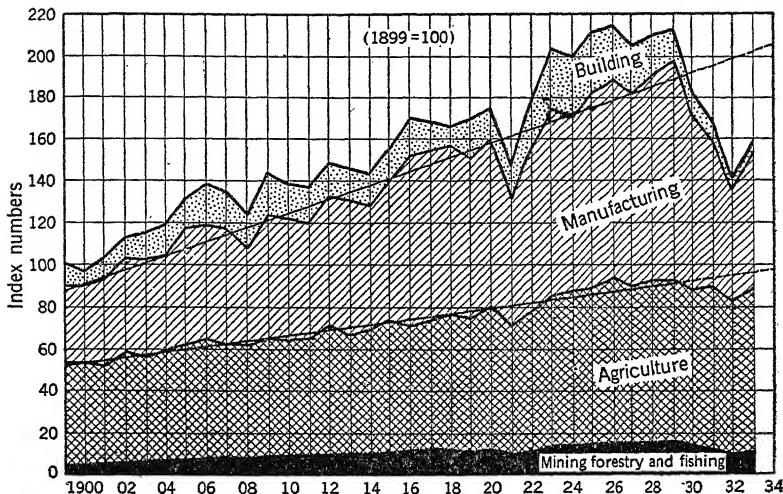


FIGURE 3. RELATIVE VOLUME OF PHYSICAL PRODUCTION IN MAJOR BRANCHES OF INDUSTRY

Reprinted from Cleveland Trust Company Bulletin.

of growth do not, of course, reflect the relative contribution of the different branches to the total physical production. Figure 3 shows the estimates of the Cleveland Trust Company for mining, forestry and fishing, for agriculture, for manufacturing, and for building during the present century. Despite its rapid growth, mineral production, together with forestry and fishing, has never constituted a large part of the total. At the turn of the century the largest part of the total physical production was constituted by agriculture, which was followed closely by manufacturing. By 1929 these two industrial groups had reversed places, but together they continued to furnish the greatest portion of the physical production. Building held third place until after 1929, when it gave way to mining, forestry, and fishing.

*Domestic and World Production.* When the physical volume of production in the United States is compared with that of the rest of the world for a decade and a half, some startling situations reveal themselves. Instead of leading or even keeping pace with the rest of the world, the United States has

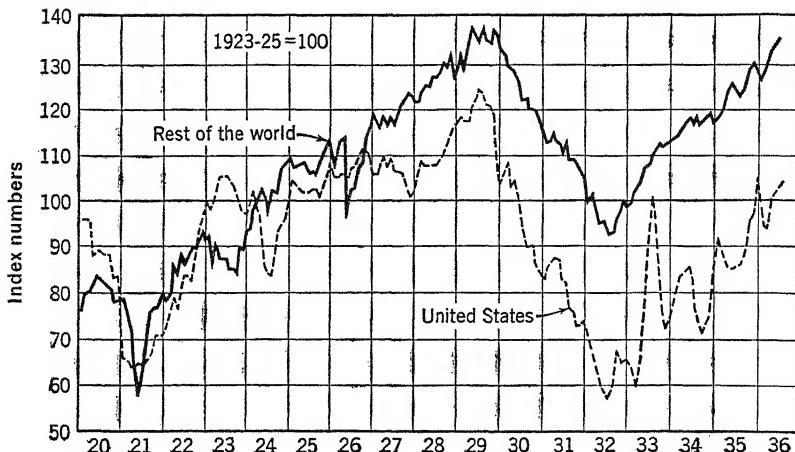


FIGURE 4. THE UNITED STATES AND WORLD PRODUCTION

fallen behind in its industrial production according to a report of the United States Department of Agriculture. During most of the period since 1920, production in this country has been below the level for ten of the leading industrial countries of the world, as indicated in Figure 4. It will be noticed that the lag became conspicuous several years before the economic convulsion of 1929 and during that depression domestic production fell much lower than in the other countries. In the middle of 1932 recovery developed, but was much more irregular at home than abroad, with the domestic level in the middle of 1936, being about as much below the level for the rest of the world as in the depth of the depression.

#### B. SERVICE PRODUCTION

Physical measurement of service activities, as already indicated, is difficult at best, and frequently impossible. To the extent that services expand and contract with the volume of products in which they are embodied economically, the changes in quantity of products reflect changes in the quantity of services rendered. But even with the services rendered in the creation of physical products there are numerous instances

in which larger volume of output has been accompanied by less expenditure of labor, so that increases and decreases in physical production do not necessarily reflect corresponding changes in the amount of labor required. On the other hand, there is reason to believe that many types of services which do not contribute directly to the creation of tangible goods are also increasing more rapidly than the volume of physical goods suggests. An illustration of this condition occurs in the railway freight service, which is used entirely for the movement of physical products. This service, represented in Figure 4, has increased faster than the combined output of crops, minerals, and manufactures. Between 1875 and 1929, the index number for ton-miles of revenue freight increased

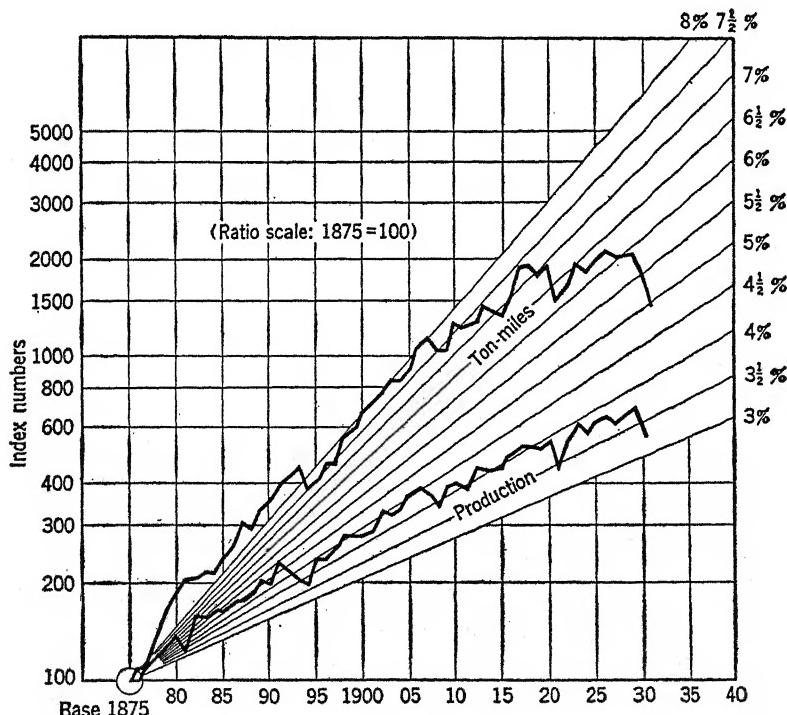


FIGURE 5. GROWTH IN RAILWAY FREIGHT TRAFFIC AND PHYSICAL PRODUCTION

Traffic estimate by Federal Reserve Bank of New York; physical production estimate same as in Figure 1.

from 100 to 2160, or an increase of over 2000 per cent as compared with less than 600 per cent for basic commodities.

TABLE 3. SHIFT IN PRODUCTION FROM COMMODITIES TO SERVICES

(As shown by distribution of gainfully employed workers)

Division	1870	1930
Agriculture . . . . .	52.8%	21.3%
Mining. . . . .	1.5	2.0
Manufacturing. . . . .	22.0	28.6
Trade and Transportation. . . . .	9.1	20.7
Clerical service. . . . .	1.7	8.2
Domestic and personal service. . . . .	9.6	11.3
Public service. . . . .	.6	1.4
Professional service. . . . .	<u>2.7</u>	<u>6.5</u>
	<u>100.0</u>	<u>100.0</u>

Another method of detecting changes in service production is that of considering the number of persons engaged in those kinds of business the function of which is primarily to render services. Our working population (ten years of age or over) increased from 12,500,000 in 1870 to 48,800,000 in 1930, and in most enterprises the number of persons employed also increased. The proportion of the total working population in major lines of business, however, increased in some cases and decreased in others. It is shown in Table 3 the number of workers employed directly in producing commodities (agriculture, mining, and manufacture combined) declined from 76 per cent of the total workers gainfully employed in 1870 to 52 per cent in 1930. This fall was more than accounted for by the decline in agriculture alone, because manufacturing and mining increased. Service activities, on the other hand, doubled from 24 per cent to 48 per cent. Within the service group as a whole, trade and transportation increased from 9 per cent to 21 per cent; clerical services from 1.7 per cent to 8.2 per cent; and professional services from 2.7 per cent to 6.5 per cent.

#### C. GENERAL BUSINESS ACTIVITY

For many purposes prompt estimates are wanted as to the course which business activity in general is taking. An esti-

mate of this kind is furnished by the Index of Production and Trade published by the Federal Reserve Bank of New York. Among the thirty-five items combined to indicate general changes are crops, pig iron, coal, petroleum, motor vehicles, electricity, rail and water transportation, employment, telegraph messages, number of telephones, newspapers and periodicals published, and postage stamps issued. On this broad basis business activity was nearly 1300 per cent greater in 1929 than in 1875, the index number increasing from 100 to nearly 1400 as indicated in Figure 6. Year to year irregularities are ironed out by a process of averaging, the results of which show merely the general course at five-year intervals except for the last few years of the period covered. However, it will be noticed that here also there is a decided tendency for the

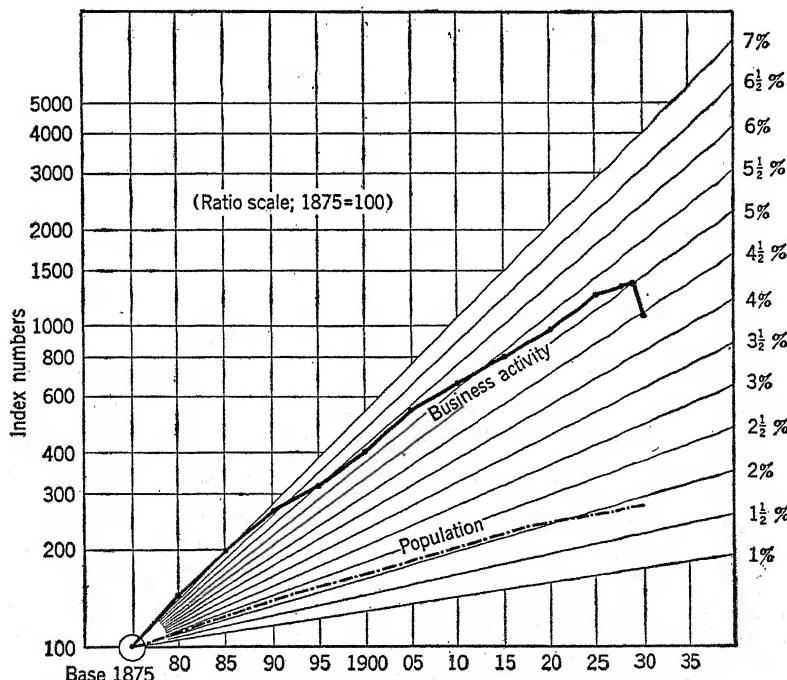


FIGURE 6. GROWTH IN BUSINESS ACTIVITY AND POPULATION

Continuous Index of Production and Trade by Federal Reserve Bank of New York. Base shifted from 1870 to 1875.

rate of growth to decline. At the turn of the century the trend indicated an annual average rate of about 6 per cent as compared with 5 per cent in 1929.

#### D. NATIONAL INCOME

The most comprehensive means of estimating the production of both commodities and services is by the income produced. Since individuals undertake activity of various kinds for the immediate purpose of acquiring money, the extent to which goods have been furnished may be judged by the size of the national income. This is the aggregate income received by individuals and that retained by business enterprises. Most of it represents payments for commodities and services. Consequently the amount of income indicates the money value of goods — both tangible and intangible. The estimated income in 1934 was about 54 billion dollars. If this were divided evenly among the population each man, woman, and child would have received \$425. With an average family of 3.4 persons, as shown by the 1930 Census, the total income produced would have been sufficient to provide only \$1445. Further consideration of the national income will be postponed to a later chapter, where it will be treated separately.

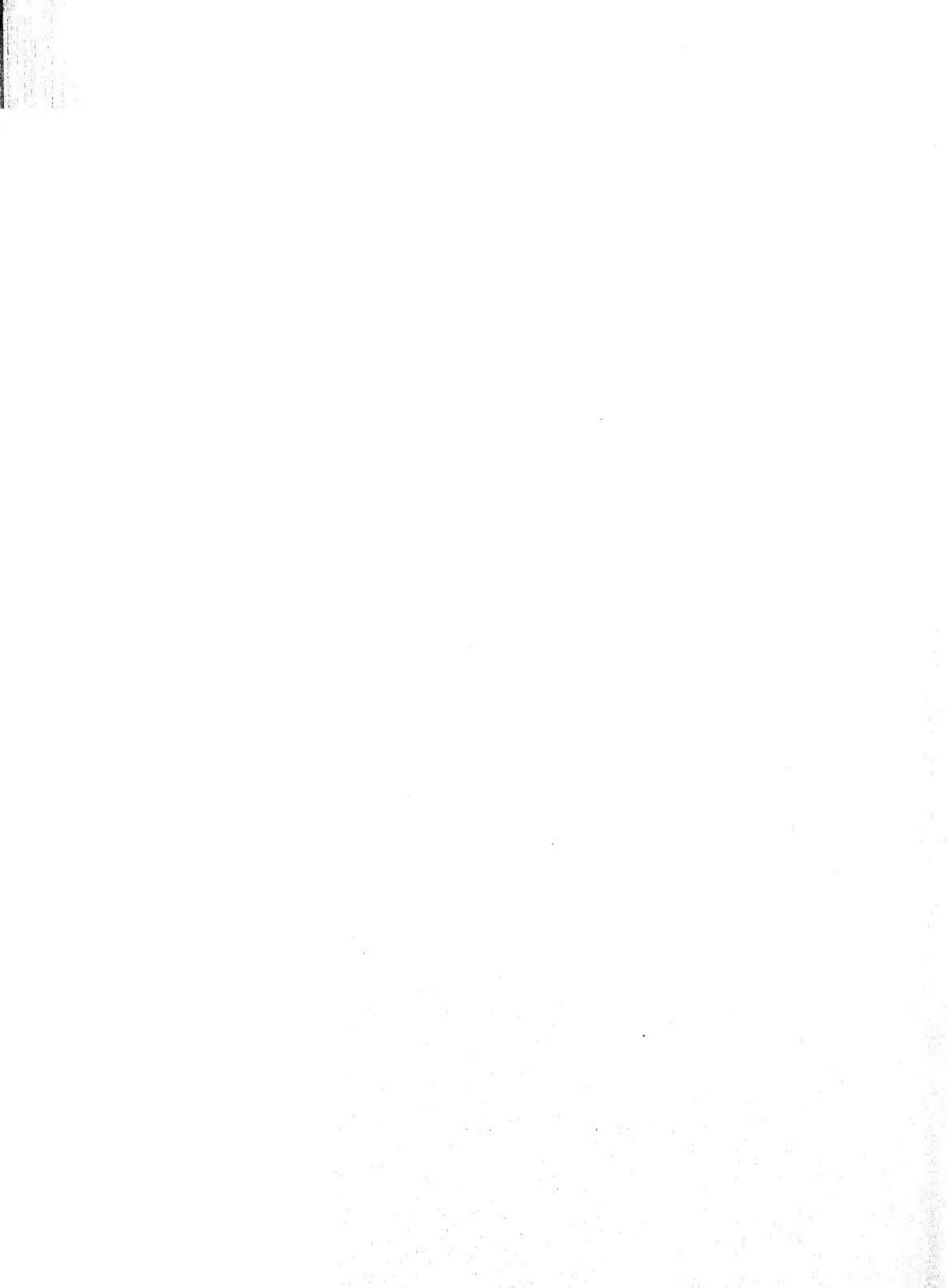
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It has been noted in this chapter that while the acquiring of money is the immediate purpose for which business activity is undertaken, the fundamental purpose of business and the justification for private enterprise consists in furnishing those things which serve to satisfy human wants. Even though many activities become embodied in physical products, this is not essential in order for the activities to be of a distinctly productive character. Some become embodied in only an economic sense, and still others are rendered independently of any products. Volume and value are means of measuring production. Both can be converted into index numbers which facilitate comparisons and indicate the course which production in general or in some of its aspects is taking. During a period of more than half a century prior to the severe setback

of 1929, production followed a distinctly upward but irregular course, with a noticeable tendency for the rate of growth to decline. Some of the circumstances contributing to the decline will be considered in the following chapter.

### QUESTIONS

1. "Production is the acquiring of money." Is this statement valid?
2. Evaluate the importance to society of the different ways in which money may be acquired.
3. "The productive process has neither beginning nor end." What is meant by this statement?
4. Explain exactly what is meant by "production of goods."
5. The production of commodities is frequently divided into agriculture, mining, manufacturing and construction. What is the basis for this separation?
6. "There is no sharp line of distinction between the production of raw materials and of finished products." Do you agree? Give reasons.
7. Why is production usually thought of as creating physical goods?
8. To what extent, if at all, can middlemen be considered as producers?
9. Under what circumstances can advertising be said to be productive?
10. Why is a distinction sometimes drawn between production in a physical and in an economic sense?
11. Would you consider the following to be engaged in production: dope peddler? political lobbyist? dog catcher? truant officer? labor spy?
12. It is sometimes said that "idleness breeds mischief." Is this a valid argument against the creation of greater leisure? Are idleness and leisure necessarily the same thing?
13. What difficulties are encountered in measuring production?
14. Can there be said to be any one method of measuring production which is equally well suited for all purposes?
15. How do indicators of production differ from index numbers?
16. "Domestic production since shortly after the Civil War has increased constantly by leaps and bounds." Does the evidence support this conclusion?
17. "One of the few benefits of war is that it stimulates production." Is this statement valid as judged by the World War experience?
18. How has the growth of production in major lines compared with the growth of population and of what significance is such a comparison?
19. What circumstances might explain the declining rate at which production has been increasing?
20. "Even if production in the United States has been increasing at a slower pace than formerly, the growth has been even slower in the rest of the world so that the United States is still in the lead." Is this statement valid? Explain.

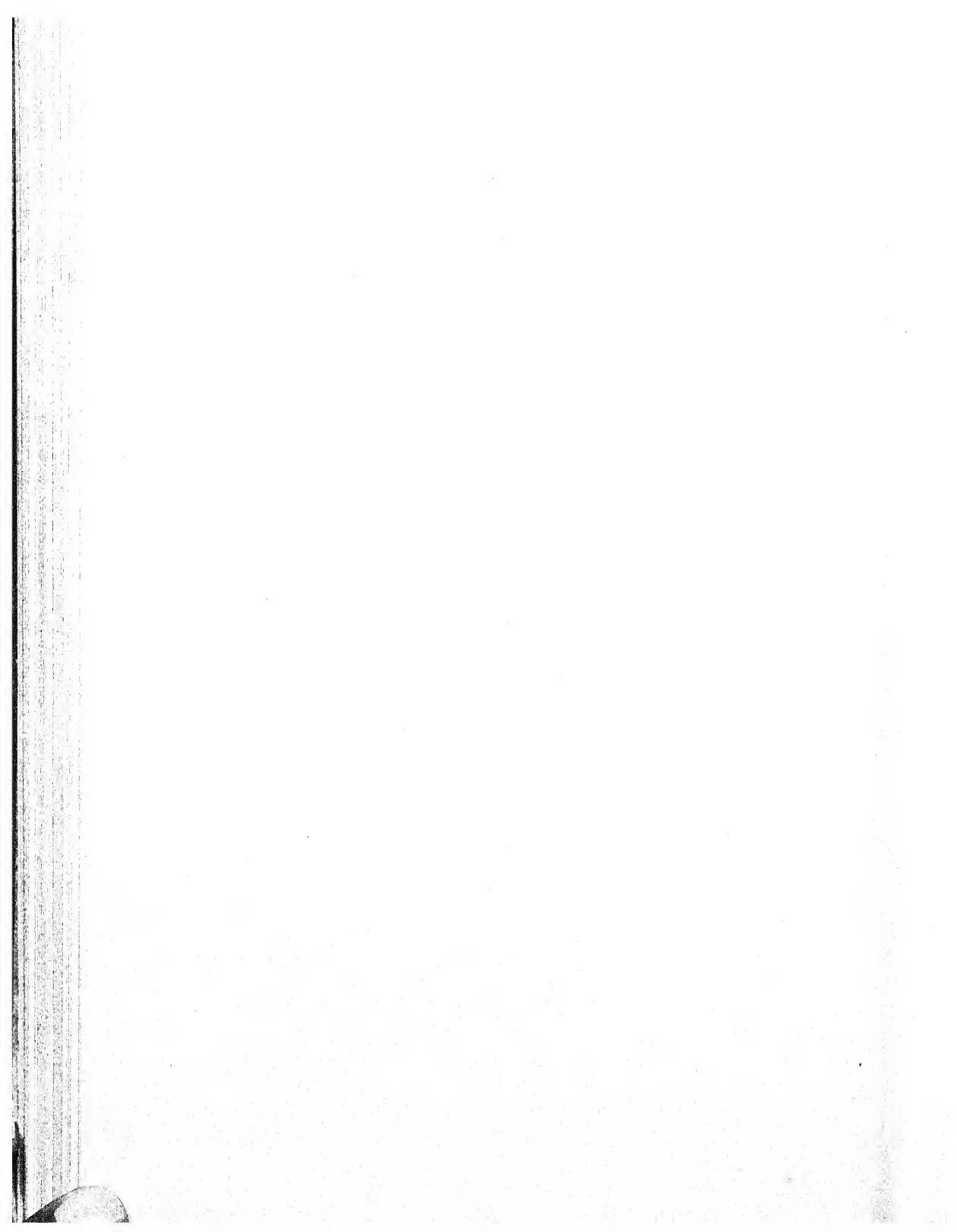


## PART TWO



# *Characteristics of Business*





## CHAPTER IV

### SPECIALIZATION IN PRODUCTIVE ACTIVITY

#### I. THE SHIFT FROM DIVERSIFIED TO SPECIALIZED ACTIVITY

SPECIALIZATION in the conduct of productive activity prevails so extensively today that it is quite generally taken as a matter of fact, with comparatively little realization that goods were not always produced under present conditions. It will be well, therefore, to consider first the shifts in objectives for which productive activity has been undertaken.

*Production for Use.* Prior to the present extensive development of organized business, individuals supplied practically all their wants directly by their own efforts. Under pressure of necessity, they spread their efforts over whatever range of activities was necessary for their existence. They furnished their own shelter, whether it was a clay hut, an igloo, a wigwam, or a log cabin. They made their own clothing from skins, wool, or from fibers of such plants as flax and cotton. They fashioned their own tools of wood, stone, and other materials. They obtained their food through fishing, hunting, and cultivating the soil. Their own physical energy furnished most of the power, whether digging with pick and shovel, pulling the plow, treading wheat, splitting logs, fashioning armor, or making clothes.

Such varied activity was generally performed with the family as the producing unit, within which there were opportunities for some divisions of labor. To some extent the separation was based on sex. While the men hunted, fished, and worked in the fields, the women cared for the children, did the cooking, spinning, weaving, and similar domestic tasks. Frequently there was further division of labor according to

the abilities of individuals. Some could make better candles than bread; others could spin better than they could weave. Children could watch the grazing animals and thus prevent them from straying while adults did more strenuous work.

The division of labor within the family, however, was a matter of convenience rather than an established arrangement, each member of the family doing whatever part he was most capable of doing. At seed and harvest times, women frequently did the same kind of work as men. Even today, in some places, women are seen working along with men at such tasks as plowing, raking hay, cultivating corn, picking fruit and vegetables, and milking.

Whether there was much or little division of labor, the activities of the family were dominated by a single purpose—to produce as much as possible. The family, being both the consuming and the producing unit, sought maximum production as a means of more abundant opportunity for consumption. Every effort was intended to increase the quantity of goods without reference to monetary values. The more abundant the harvest and the larger the flocks, the greater was the prosperity of the family. Under these circumstances there was no incentive to curtail production as a means of increasing prosperity, since quantity of goods, not prices, constituted prosperity.

While productive activity was undertaken to supply the family itself with goods, there was also some exchange of commodities and services. At harvest time, for example, exchange of labor was not unusual, and some of the cooperative activities became social events, such as "husking bees." Surplus products were also exchanged. Apples might be bartered for potatoes and cows traded for sheep. But the surpluses forming the basis for such barter were mainly accidental and not deliberately planned for the purpose of trading. Exchange merely offered a convenient means of balancing surplus and deficit between farmers for their mutual advantage. Trading instead of being a means of obtaining a living was merely incidental thereto.

*Production for Use and Trade.* Gradually activities began to shift into channels which offered opportunities for advantageous trading. While most individuals continued to live close to the soil and depended largely upon it for their basic requirements, trading steadily became more and more a deliberately planned aspect of production. At an early stage in this country trading was encouraged by the establishment of many colonies as sources of raw material for England. The virgin forests furnished needed timber for the construction and equipment of ships and for making barrel staves, shingles, gun stocks, and many other necessities. Fur-trading developed; and, with the discovery of iron, ore was shipped abroad or was manufactured here into nails, firearms, and agricultural implements and other tools, for which there was a ready market abroad.

Once under way, production for sale tended to increase. More and more, individuals forsook the traditional diversification of activity by which they had supplied all their own wants, and directed their efforts to producing things that they could sell. The raising of cotton, tobacco, and cattle came to be commercial pursuits, as did fishing, mining, and the manufacture of textiles, wood, leather, and metal products. Especially after the Revolution, when tariff protection was given domestic manufacturing against foreign competition, production for sale increased rapidly. Thus producing goods mainly for use but partly for trade evolved into producing mainly for trade and only partly for use.

As long as trade was either incidental or supplemental to production for family use, little attention was given to the creation of values. If the exchange value of butter was low, the farmer merely accepted fewer commodities at the country store for it than when its exchange value was higher. Conversely, the more he got for his products, the more he could buy. But the value of butter was not the dominating consideration in determining how much he would produce. Whether its value was high or low, he made whatever quantity his available milk furnished, and traded any surplus over

the family requirements. His prosperity did not depend sufficiently on trading for him to be interested in curtailing quantities in order to create values. Moreover, the opportunities for doing so had not developed.

*Production for Sale.* From a supplementary activity, trading has become the dominating objective of the creation of goods. The family as a producing unit has given way to the business enterprise engaged in more or less specialized activities. Its purpose is not to furnish the things which those associated with it, including workers, require for consumption, but to supply those goods which others will buy. Today millions upon millions of persons are engaged in producing things which they themselves cannot use, do not want, or cannot afford to buy, while they are incapable of producing for themselves the things they do want. Tobacco is often grown by persons who do not use the product; few if any of the workers contributing to the manufacture of a Packard automobile could afford even the operating costs of so expensive a car. On the other hand, these workers are unable to make their shoes, construct their houses, or create countless other things which they consume.

With highly specialized production for the purpose of sale, the prosperity of individual enterprises and industries depends not only upon the amount of goods that can be produced but also upon the amount of money for which the goods can be exchanged. Indeed this exchange power or value is likely to be of paramount importance in the eyes of producers. But value is influenced greatly by the quantity of goods offered for sale. Experience has shown that the scarcer goods are in relation to the demand for them, the higher will be the price. Therefore, since producers are largely interested in creating values, attempts are frequently made deliberately to curtail the amount of available goods and thereby obtain higher prices. These prices may reduce materially the quantity of goods purchased by consumers, but the expectation and hope of producers is that a sufficiently large aggregate quantity will be purchased at the higher prices to yield sellers more income than a larger quantity would yield at lower prices.

Whether or not the expected benefits are realized, two points must be kept in mind with respect to the practice of seeking increased prosperity by curtailing the creation of goods. First, the incentive for this practice does not arise until goods are produced for sale rather than for use. Secondly, the opportunity for greater prosperity through restricted production is distinctly limited. Even when individuals produce goods for their own use, they may advantageously produce less of one thing and more of something else, thus bringing about a better balance between the things produced. In such cases there is not a general curtailment, for reduced production of one thing is offset by increased production of others. When individuals, enterprises, and industries undertake to restrict the production of their specialty in order to create higher values, the situation is different in that curtailment in one direction is not accompanied by expansion in others. Creating higher values becomes a goal in itself, but one which cannot be employed widely without disastrous results to general prosperity. Higher values serve as a source of private gain only so long as producers in other specialized lines do not set about similarly to create higher prices for their goods. It is interesting that manufacturers should have found the curtailment of agricultural production as a means of increasing farm income so un-American when they had so long employed the same tactics less conspicuously for their own benefit. This merely serves to emphasize the one-sided benefits of restricted production. The tactics of curtailment can serve to benefit one group at the expense of others. But when other groups employ the same tactics all suffer through the resulting reduction in salable goods which are fundamentally essential for general prosperity.

## II. TYPES OF SPECIALIZATION

Many and varied circumstances give rise to specialization and impose limitations upon it. In some cases the dominating circumstances are obvious, in others they are not; some are subject to modification, but not others; some influences are

superficial, while others are deeply rooted; some are local in scope, and others are world-wide.

Viewed broadly, the types of specialized activity having greatest economic importance may be designated as geographical and functional. The former refers to the place at which the specialized activities are conducted, and the latter refers to the nature of the activities without regard to the place at which they are performed.

#### A. GEOGRAPHICAL SPECIALIZATION

Enterprises tend to conduct their operations at places which offer opportunities for gain. To a greater extent than is often realized such natural forces as climate, topography, qualities of the soil, and existence of mineral deposits exert dominating influences which make certain locations essential for particular industries, or at least make some locations preferable to others. In some cases political factors, such as the tariff, will cause certain industries to develop where natural conditions are not especially favorable and where the disadvantages are often so great that these industries could not survive in competition with ones more favorably located. In still other cases chance events play an important part. The early localization of the shoe industry in New England was influenced by the accidental landing of settlers in that area. Had the winds and waves driven the *Mayflower* to some other section of the eastern shore, that region would have become a center of various specialized activities. After industries become localized the concentration may continue even though the original advantages have ceased to operate. When under the stimulus of certain local advantages factories are constructed, machinery installed, workers assembled and trained, financial facilities provided, subsidiary or feeding industries attracted, marketing facilities developed with the locality as a hub, etc., these circumstances develop a magnetic influence which tends to hold the specialized activity to that particular area and give to it what is sometimes called the advantages of an early start.

While geographical specialization may be accounted for by a number of circumstances running from natural forces to the vagaries of chance, these circumstances manifest themselves through such economic considerations as the availability of raw materials, transportation, power, labor, and markets.

*Raw Materials.* In obtaining many basic raw materials, productive activity must be performed where the resources are found. This is especially true of mining and quarrying; to a lesser extent of forestry and fishing; and to a still smaller degree of agriculture. Within limits, forests may be deliberately planted, bodies of water stocked with fish, oyster beds cultivated, both animals and plants peculiarly adapted to the existing conditions of soil and climate may be bred. But for the most part the place where favorable natural conditions are found dominates the location of enterprises furnishing basic materials.

Once the basic materials have been obtained, their subsequent processing may or may not be done in the same locality. Here the cost of alternative possibilities comes into operation. Cement is made where limestone and shale are found; commercial canning of fruits and vegetables is likely to occur near the places where these products are grown; sawmills are usually located nearer to lumbering operations than are the furniture factories; ginning of cotton occurs where the product is grown, while the fiber is manufactured into cloth at widely separated locations.

*Transportation.* The topography of the land has influenced routes of travel and thereby the location of productive activities. Had it not been for the obstacle of the Allegheny Mountains to an early westward movement of colonists, the manufacturing activities would never have been located so extensively along the eastern seaboard. Towns developed along the Mississippi River before inland centers of population emerged. But today, despite the fact that transportation routes still exert a strong influence on the location of business enterprises, the dominating influence of natural topography on these routes has diminished. By boring through hills and

mountains, and by bridging rivers, these traditional barriers to continued transportation are overcome. Even more important than the existence of facilities for transportation is the speed with which distance can be covered and the expense involved: changes in freight rates between localities may shift centers of industrial activity from one area to another.

*Power.* In some lines of business the availability of power has influenced the location of enterprises. In this country, except for pumping water, the wind has never been used to any great extent as a source of power. Reliance was placed chiefly on water power in the early days of industrial development. The flowing streams attracted to their banks grist, paper, textile, and other mills. The location of other fuels, notably coal, acted as magnets in the location of such industries as steel. Even though power has become increasingly important for industry, and though the location of enterprises is often determined by the availability of cheap power, the source of supply no longer exerts the former geographical influence. With the use of electricity, enterprises requiring current can be located miles away from the place where the power is generated.

*Labor.* Similarly, the availability of labor influences the location of enterprises. Although its present influence varies considerably, this factor is of less importance now than formerly. Many of the early industries, such as hatmaking and weaving, began as hand and home trades. Enterprises in these activities had to be located where skilled workers were available. Immigrant craftsmen formerly tended to center around the ports of entry, such as New York, Boston, and Philadelphia. A supply of cheap labor, rather than of skilled workers, dominates the selection of places where some types of enterprise establish themselves. Silk mills and cigar factories often seek industrial communities in which the wives and daughters of factory workers furnish an abundance of cheap labor. The availability of non-union labor has been one of the factors tending to attract some types of enterprise to rural communities. In these areas unionization is more difficult than in large cities.

*Markets.* Accessibility to markets is another consideration influencing the places at which many specialized activities are conducted. In earlier days, the limited facilities for transportation and communication caused markets to be relatively local, and such establishments as those of the blacksmith and the wheelwright were found in close physical proximity to customers. The shipping points and crossroads of those times frequently furnished convenient locations. Even today, the location of customers dictates the areas best suited for most retail and wholesale enterprises as well as for most service activities. But, to an increasing extent, economic rather than physical proximity is of paramount importance. Especially is this the case with the manufacture of heavy and bulky products. Many enterprises in these fields could carry on their fabricating operations advantageously at great distances from their customers if transportation costs did not make remoteness prohibitive. Advertising, catalogues, traveling salesmen, and branch offices could furnish all the necessary contact with customers, and local warehouses could assure prompt delivery of goods, but the distance, with transportation costs tending to increase as the physical gap widens between the point of shipment and the point of destination, constitutes a serious handicap. The industrial map of the nation would be quite different if goods, like letters, could be transported at uniform rates regardless of distance. While this would be uneconomical and tend to destroy natural advantages of location, it emphasizes, nevertheless, the importance of economic proximity to markets.

#### B. FUNCTIONAL SPECIALIZATION

While the concentration of particular types of activity at certain places accounts in part for the specialization found in the productive process, other factors quite independent of geographical conditions also have their influence.

*Occupational Specialization.* In 1935 there were about 51,000,000 persons in this country who in the absence of a depression would have constituted the gainfully employed

portion of the population, and who would have been distributed among thousands of more or less specialized occupations requiring different kinds and degrees of ability. This distribution is determined in large part by the person's inherent aptitudes to do work, by the amount of time and expense devoted to his training, and by the nature and value of the various kinds of work. In order to understand how types of functional labor develop, then, it is necessary to consider these relations of the workman to his work.

(a) *Types of Ability.* In part, the division of labor reflects differences in natural qualities and abilities. Not all human beings are endowed at birth with the same potential capacities. Even with equal opportunity for development, the physical, mental, and nervous characteristics of individuals are quite different. These differences have varying occupational importance. The mental qualities required for administrative work are not needed for street-cleaning; the physical form required for modeling clothes is irrelevant for factory work; the quick nervous response essential in operating a locomotive is not required for cotton picking; and the bodily strength needed in lumbering is not required for surgery. A tall man may be selected as an inspector of automobile tops while a man with small hands may be employed to repair small radios.

Acquired ability plays a more important part in most occupations than does natural ability. Inherited and inherent qualities constitute the raw material which may be molded and fashioned in various ways. This is accomplished through training. Long before formal classroom instruction was available, man learned how to do things by experience. But experience is a long, winding, and often hazardous route to accomplishment. Along its path is found evidence of both success and failure. At times it must be traveled, especially for journeys into new territory. Well-known areas, on the other hand, can be covered both more quickly and more satisfactorily by the carefully planned and well-laid highways of formal training.

(b) *Types of Training.* Following the elementary education a distinction develops between cultural and technical training. The latter has also been called "bread-and-butter" education, since it is intended to aid individuals in performing useful work. In contrast to this type, cultural training is intended to help individuals to enjoy life more fully by understanding the world in which they live. The liberal arts courses of high schools stress cultural training, while commercial courses emphasize technical training, as do most courses of private trade and business schools. The same separation on a more advanced scale occurs between the colleges of liberal arts and the professional schools for training in such subjects as medicine, dentistry, law, and business.

Technical training may or may not require much previous education as a foundation. With merely elementary school training individuals may, through apprenticeship or trade school, qualify for such trades as bricklaying and plumbing. On the other hand, civil engineering, accounting, or nursing is likely to require at least high-school education as a base. For admission to medical schools a college education is usually a prerequisite. Some of the large industrial enterprises employ only college graduates as prospective future executives and then provide them with several years of special training covering all aspects of that particular business. In the course of this training the employee may be required to work at all kinds of jobs beginning with that of common labor.

Furthermore, technical training differs in its scope. Little or nothing more than the development of manual dexterity may be involved. With some kinds of typing and calculating machine work the only ability required is that of speed and accuracy in operating the machines. The operators need not know anything about the construction of the machines, nor anything about the purpose of the work they have been instructed to do. Dexterity is required of the pianist, but discriminating abilities are also needed. The technical training of the surgeon must be sufficiently broad to enable him to decide when an operation should or should not be performed,

to know how to perform it, and to be able to apply his knowledge by actually doing the operating.

(c) *Types of Work.* Occupations may be grouped in various ways. They may be divided on the basis of the materials used, as with the metal trades, or the instruments required, as in the needle trades; or they may be grouped by the nature of the activities, such as persuading, in which case the preacher, lawyer, and writer of advertising would be in the same class. For present purposes, however, it is more important to emphasize the ability required in performing various kinds of work. On this basis several types of occupations may be distinguished by such terms as profession, executive, trade, and task. There is, however, no sharp line of separation between them; one tends to shade into the other.

Professions require considerable native and acquired ability. In addition to a broad educational background, at least equivalent to that of high school and usually that of college, generally two or more years of technical training are required. During this period individuals become familiar with the principles and laws pertaining to their specialty and are trained in the application and use of them. Through training in laboratories, clinics, and similar institutions, a degree of experience is acquired in the exercise of independent judgment and discrimination. At the conclusion of the formal training there is an indefinitely long period in which ability may be extended through further study and practical experience.

Executive work, in so far as it parallels or approaches professional work, differs from it mainly in that experience is likely to play a more important part in qualifying individuals to make independent judgments in their particular line of work. At present, many prominent and capable executives have a distinctly limited background of formal training, either cultural or technical. This is especially true of those who "rise from the bottom." But to an increasing extent executives are being drawn from the group with a broad foundation of formal training.

Trades require less ability than professional or executive

work. The natural ability must be sufficient to permit individuals to receive such training as is necessary to enable them to understand what they must do and to acquire skill in doing it. To only a very limited extent must independent judgments be made. The general education required is never more than the equivalent of high school and is likely to be considerably less. Seldom more than a year or two of special training is required to develop the particular abilities needed, although the period may be longer if the training occurs in the course of performing other work, as is likely with apprenticeship. Included in the trade group are machinists, electricians, plumbers, and bookkeepers.

Tasks are comparatively simple types of work and are often subdivisions of trades. Shoemaking, for example, has been divided into numerous parts from the cutting of leather to the nailing of heels. In most cases the requirement is either physical strength or dexterity in performing routine work. Little or no general training is required, and the special training can usually be obtained in a few weeks or months. Maximum efficiency can be obtained by a short period of practice or experience. The need for independent judgments approaches the vanishing point. If the work is divided into extremely simple operations, the employment of morons or persons with very little mental capacity is at times possible. The range of task work runs from common labor to routine clerical work and many kinds of machine operation.

*Industrial Specialization.* Whereas occupational division of labor emphasizes the activities of individuals, industrial division stresses group activity. Formerly the difference between the two was not so great as it is today. At one time the watchmaking industry consisted primarily of watchmakers and the relatively simple tools of their trade, but today the industry comprises vast quantities of capital and scores of occupations, with most workers incapable of making a complete watch. Consequently the industry cannot be considered as merely an enlarged occupation.

It will be recalled that the productive process furnishes

consumers with both tangible products and intangible services. The working population is about evenly divided between these two broad groups of industrial activity. According to the 1930 Census about 46 per cent of the ordinarily gainfully employed were engaged in producing physical goods and 54 per cent in furnishing services. On the basis of income produced, the industrial specialization was not quite so evenly balanced. The National Bureau of Economic Research estimates that industries furnishing physical products accounted for 40 per cent of the national income, while the furnishing of services accounted for 60 per cent.

If these two groups of activity are separated into their leading parts we find four major divisions of industrial specialization. The furnishing of physical products may consist either in supplying raw materials or in fabricating them, while the rendering of services may occur in the distribution of products or may be performed independently of any products. Each of these divisions absorbs roughly a fourth of the population, as indicated in Figure 7. About 20 per cent of the workers

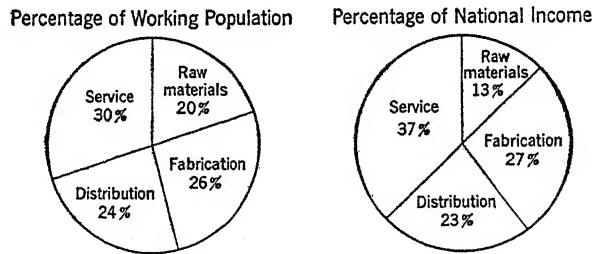


FIGURE 7. MAJOR DIVISIONS OF INDUSTRIAL SPECIALIZATION  
Based on data of National Bureau of Economic Research appearing in Bulletin 49.

furnish raw materials; 26 per cent are engaged in fabricating these raw materials; 24 per cent are required in the distribution of products, and 29 per cent specialize in distinctly service activities. From the standpoint of income produced, the major industrial fields are not so nearly balanced. Although fabrication and distribution retain their relative status by furnishing 27 per cent and 23 per cent, respectively, of the

income, the raw material division declines to 13 per cent and the service group rises in importance to nearly 37 per cent.

TABLE 4. INDUSTRIAL SUBDIVISIONS (1929)

	Workers (Percentage of Total)	Income Produced (Percentage of Total)
Agriculture.....	17.1	9.0
Mining.....	2.5	2.3
Electric light, power and gas.	0.7	1.6
Manufacturing.....	22.6	23.4
Construction.....	3.4	3.7
Transportation.....	7.0	8.4
Communication.....	1.1	1.2
Trade.....	16.2	13.7
Finance.....	3.2	11.3
Government.....	6.8	7.7
Service.....	12.6	10.5
Miscellaneous.....	6.8	7.2
	100.0	100.0

Source: Computed from data of National Bureau of Economic Research

These predominate types of specialization may be further divided and subdivided. The customary classification for general purposes is shown in Table 4. But these groups in turn can be separated until in some cases the activities become extremely limited in nature. Thus a group of concerns known as the pipe nipple industry specialize in merely cutting metal pipe into lengths of approximately twelve inches or less and cutting threads on each end.

### III. BENEFITS AND LIMITATIONS OF SPECIALIZATION

Like dynamite, specialization has tremendous power, which can be beneficial or injurious to man, depending upon his use of it. Under certain circumstances it is a willing and efficient servant, but under others it becomes a destructive tyrant.

#### A. BENEFITS OF SPECIALIZATION

*Individual Benefits.* When productive activity is performed by a process of specialization, the benefits to individuals take

different forms. In some cases these benefits appear in the greater ease with which jobs can be secured. Individuals can qualify for the less skilled occupations with comparative ease. When little or no special training is required for the performance of work, and adequate experience can be developed in a few weeks or months, the availability of jobs to individuals is much greater than if years of apprenticeship or other training were required. In other cases, specialization offers the opportunity for larger incomes. This inducement encourages individuals to undertake long and strenuous training to qualify for certain kinds of work. Then, too, the variety of specialized work gives individuals an opportunity to select that which appeals to their interests. Thus secretarial work may appeal to one person and selling to another.

*Social Benefits.* From the standpoint of society at large, the benefits of specialization center in part around the availability of goods. Division of labor opens the way for larger volume, greater variety, and improved quality of goods. When individuals and enterprises restrict the range of their activities, a proficiency in performance is developed which is not possible with diversified activity. This comes partly through the opportunity to utilize particular combinations of ability which are best suited to certain kinds of work, partly through the familiarity and dexterity which comes through repetition, and partly through the employment of specialized equipment. These same circumstances contribute to expansion in the assortment of goods. Not only have distinctly new products, such as airplanes and television, been developed through specialization, but additional varieties, styles, shapes, sizes, and improved designs of old products have been made which more adequately serve the needs of consumers. The services of Burbank greatly enriched the assortment of plant life available for ornamental and industrial purposes, while Edison and Steinmetz contributed to the use of electricity in ways undreamed of when Franklin was flying his kite.

Scarcely less important in some respects has been the conspicuous improvement in the quality of many goods. Through

division of labor, knowledge has been acquired by which plants and animals are deliberately bred to furnish superior qualities for particular purposes. In manufacturing, increased precision in cutting metal and controlling temperature has made possible more serviceable products. Without a high degree of precision in duplicating materials and finished goods, standardized production of interchangeable parts — which is so characteristic of the automobile and some other industries — would be impossible. The dependability of transportation and communication is another indication of the improved quality which specialization has made possible. The opportunity for making a finer quality of goods, however, may not be utilized. This is especially likely to occur when quality extends the life of consumable goods and thus curtails the replacement possibilities for private business.

In monetary terms, the quantity, variety, and quality of goods made possible through specialization is expressed in costs and prices. When a given amount of productive energy results in a larger volume of goods, their per-unit cost declines. With lower costs, competition forces lower selling prices. The lower prices enable a given amount of consumer income to buy more goods, thus making possible further production. Or it may be that the economies in producing the same goods will be diverted in whole or in part to furnishing better quality or a wider assortment of goods for the same price.

By no means the least important benefit of specialization is the opportunity it affords for the conservation of human energy. Division of labor permits adjustments between the abilities of workers and the requirements of jobs. Figuratively, round pegs can be put in round holes and square pegs in square holes. By such an arrangement, greater speed and accuracy of work can be obtained than if individuals were performing tasks for which their native and acquired ability was not suited. Moreover, by separating those aspects of work which require judgment and discretion from those which do not, opportunities occur for transferring arduous and tedious work to machinery. Finally, the increased production

to which division of labor contributes gives greater opportunity for leisure without reducing the material standard of living.

#### B. LIMITATIONS OF SPECIALIZATION

*Nature of Limitations.* Great as the possible advantages of specialization may be, this method of organizing productive activity has important limitations which must be recognized if undesirable consequences are to be avoided. These limitations arise out of the effects of specialization on workmen, the extent of the market, and the stability of market conditions.

(a) *Human Limitations.* As a matter of social policy, division of labor can be justified only within such limits as safeguard the interest, initiative, and health of individuals. While specialization is increasing the volume, variety, and quality of goods, it may be injuring physical well-being and curbing the development of individual capacities and abilities. The concentration of effort, and the repetition of operations day in and day out within a restricted field, may so limit the individual's range of interest as to create a monotony which saps his physical, mental, and nervous energy. Practice and experience instead of developing greater ability and broader interest may very easily operate to establish ruts from which individuals are unable to free themselves. These conditions are not only individually injurious, but socially unsound, despite the fact that in the competitive struggle they may be profitable to employers.

(b) *Extent of the Market.* More influential than human considerations in restricting the degree of specialization under a system of private gain are the limitations imposed by the extent of the market. This limitation does not refer primarily to a geographical area, but rather to the possibilities for selling goods. Specialization cannot be carried beyond the point where sufficient quantities of particular goods can be sold to justify both individuals and enterprises in concentrating their efforts on furnishing them. In part, the selling possibilities

depend upon the desires of consumers for the goods. So important is this factor to the profitability of private business that enterprises spend vast sums yearly for advertising in order to create and maintain demands for their particular commodities or services. But desires for goods are ineffective without purchasing power, and there has been no corresponding drive to furnish the mass of consumers with the means for purchasing more goods. While either lower selling prices or higher wage income would furnish the means for greater consumption, neither has been utilized as fully as would have been advantageous in expanding markets. Along with the consumer's desires for goods and his purchasing power, facilities for transportation and communication have come to play a vital part in determining the extent of the market. These facilities were of little importance when trade was local in character, but when producers and consumers of particular goods are separated geographically, the reliability, promptness, and cost of transportation and communication exert an important influence on the extent of the market. Without cold-storage transportation, the markets for perishable foods, for example, would be principally local and would not provide the possibility for such specialization as characterizes the meat-packing industry.

(c) *Stability of Markets.* For many specialized activities the stability of markets is of increasing importance. Sudden and unexpected changes are particularly disrupting. When individuals, instead of so diversifying their productive efforts as to furnish the things they consume, voluntarily restrict the range of their activities, interdependence automatically develops among those engaged in various types of specialization. Each needs a market for the goods he produces and a source of supply for the things he wants but which he does not himself produce. Sellers need buyers and buyers need sellers, a fact which is equally true of business enterprises with their industrial specialization and of nations with their geographical specialization. Moreover, the further that division of labor is carried, the greater become the interdependence and the

seriousness of the inability of individuals, enterprises, and nations to exchange on mutually advantageous terms their specialized goods for the specialized goods of others. Simultaneously, a high degree of business instability occurs, which will be considered in a later chapter.

When market instability develops, there comes also a tendency toward diversification of activities. This is evidenced in various ways. As a consequence of the worldwide disruption of trade during and after the World War, there developed a wave of nationalism. Countries sought through tariffs, embargoes, and subsidies to become self-sufficient or at least less dependent commercially on other nations. The high degree of instability of employment in the automobile industry is probably responsible in part for the proposal of Henry Ford that manufacturing be more widely diversified geographically. This would coordinate it more closely with agricultural activity. The location of plants in rural areas would enable factory workers, with the aid of their families or through cooperative effort, to cultivate land of their own and thus supply food for themselves and their families in times of industrial unemployment. When enterprises find that at prevailing prices they cannot fully utilize their equipment or personnel in furnishing their specialties, they are likely to seek side lines in which other concerns are specializing. Partly to avoid certain types of instability, some manufacturing concerns diversify their activities so as to include the sources of supply for the raw materials for their specialty and also a market for their finished products. This diversification enables them to become more nearly self-sufficient units.

It is, of course, quite possible that attempts of enterprises and nations alike to protect themselves from instability of the markets in which they buy and sell specialized commodities and services may not be the most socially beneficial means of correcting the difficulty. Often the resulting diversification intensifies the instability it seeks to avoid or creates instability in some other direction. This, however, does not alter the

importance of adjusting the degree of specialization to the stability of conditions under which trade occurs.

*Reducing Limitations.* The circumstances which often interfere with specialization being carried to the point where it would be most beneficial to both individual workers and society in general are not incapable of modification. Through deliberate control much can be done to eliminate or reduce existing barriers to further and more effective specialization.

(a) *Human Element.* Despite the fact that human beings are often considered little more than animals or slaves to be worked as long as they are useful to others and then discarded, forces are at work which are bringing about changes. More consideration will undoubtedly be given to workers. They will be recognized as human beings who are engaged in a vast and complex system of cooperative effort. Not only will they be enabled to earn a better living, but opportunities for a more abundant life will be furnished.

Providing means for better placement of workers is one much-needed improvement. This undertaking calls for more knowledge than generally exists as to the precise requirements of jobs, and more interest in the physical, mental, and nervous qualities of individual workers. Only a comparatively few concerns have undertaken this task, even though it holds large possibilities. Another method of approach is to make work and the conditions surrounding it more attractive. Well-ventilated, properly lighted and attractive places in which to work increase the attractiveness of the occupation. Noise, although frequently capable of being greatly reduced, is usually accepted as a necessary evil. Conveniently adjusted workbenches and comfortable chairs are often considered fads, although discomfort and inconvenience arising from their absence are responsible for the loss of much productive energy and contribute to the unattractiveness of work. Still another way of increasing the efficiency of the employee is deliberately to create opportunities for workers to develop those interests and capacities which they possess but which their jobs do not

utilize. This requires, on the one hand, sufficient reduction of time and energy required by the work, so that individuals will be able to cultivate other interests. At the same time, individuals must be encouraged to cultivate these interests. Some enterprises have made progress in this direction by providing convenient facilities for recreation, such as tennis or baseball, or for training in the arts. The important point for consideration is that individuals shall have opportunities and be encouraged to develop the talents which their specialized work does not require.

*Market Expansion and Stability.* The obstacles to specialization imposed by restricted and unstable markets are also capable of being controlled to a considerable extent. The first step in this direction is the realization that if the benefits which specialization has to offer are to be attained, the economic individualism which was so well suited to pioneer life must be replaced by cooperation. The economic interdependence which division of labor creates has already gone far beyond the point where individuals, enterprises, and nations can live unto themselves alone, even though they may want to do so. The population of the United States, and of most of the world, has become so large that specialization is no longer a matter of convenience but of necessity, and the problem now is really how this situation can be used to the greatest advantage of society. Only when individuals become conscious that fundamentally their economic interests are interrelated can many barriers be removed to greater and more stable markets.

With the realization that economic individualism must give way to cooperation as division of labor increases interdependence, the way is opened for deliberate planning and coordination of productive activities. As a result of the extensive specialization of individuals, enterprises, and nations there has developed a vast diversification of aggregate activity which must be coordinated in order to yield its potential benefits. In the absence of planning and coordination, the market for particular goods is glutted one year and is understocked

the next, and the tragic spectacle develops of widespread curtailing of production in the face of misery, poverty, and starvation. If the same ingenuity and effort that are expended in making people want things they cannot afford to buy were directed toward making possible the purchase of the commodities, there would be larger markets for most goods. Only by developing facilities for broad planning and for coordination of diverse activities can larger and more stable markets be furnished.

### QUESTIONS

1. "The shift from diversification to specialization in productive activity has had far-reaching influences on economic life." What is the nature of the shift to which reference is made and how has it affected economic life?
2. How, if at all, does specialization help to explain the existence of pressure to curtail production as a means to greater prosperity?
3. What circumstances account for geographical specialization?
4. "Geographical influences exert less economic influence today than in earlier times." Evaluate this statement.
5. What is meant by functional specialization?
6. What circumstances account largely for the existing occupational division of labor?
7. "Acquired ability plays a more important part in most occupations than does natural ability." Do you agree? Explain.
8. Compare professions, executive work, trades, and tasks from the standpoint of the kinds of ability they require.
9. How is the working population divided as between the major lines of industrial specialization?
10. "Specialization benefits both individuals and society." Is this statement valid? Explain.
11. "Specialization reduces human being to robots." Do you agree? Explain.
12. What limitations, if any, do market conditions impose on specialization?
13. "Specialization is inevitable." Evaluate this statement.
14. "There are, of course, some unsatisfactory aspects of specialization, but these must be accepted in order to derive the benefits." Can this be considered a valid statement? Explain.
15. What steps may be taken to reduce the limitations encountered by specialization?
16. "The further specialization is carried the more interdependent do individuals, enterprises, and nations become." Is this condition unavoidable? Explain.

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17. "This country grew to greatness on the basis of economic independence, and such independence is more vital to a nation's well-being than is specialization with its accompanying interdependence." Do you agree?
18. "Economic individualism must give way to cooperation." Why cannot both exist?
19. What circumstances make deliberate planning and coordination of economic activities more important today than formerly?
20. "Specialization should not be judged solely in terms of the material benefits it makes possible." What other considerations require attention?

## CHAPTER V

### MONEY

#### I. THE FUNCTION AND FORMS OF MONEY

##### A. FUNCTION OF MONEY

With the development of specialization, money began to play an important part in the productive process. The necessary exchange of goods under a system of specialization requires a device for facilitating trade. Just as language facilitates the exchange of ideas, so money serves in the exchange of goods. This purpose is often concealed in both instances. The use of words may actually conceal and confuse ideas; money may actually be used in such a way as to hinder and disrupt trade. Despite abuses, the major function of and only justification for money is to facilitate trade. In so far as money performs its function in the productive process it does so in two leading ways. One of these is as a unit for comparison and accounting; the other as a go-between in the actual exchange of goods. In the first case money serves as a standard of value; in the second, as a medium of exchange.

*Standard of Value.* Without a standard of value the conduct of modern trade would be impossible. When comparatively few things were traded, and those mostly on a barter basis, it was convenient to express the value of one commodity in terms of another. In trading land for slaves the value of land could be expressed in terms of slaves or the value of slaves in terms of land. If 10 sheep were exchanged for 20 goats, the value of a sheep was 2 goats, and the value of a goat was equivalent to one half of a sheep. But this method of expressing exchange power does not facilitate the trade which develops from extensive production of goods for sale. Here a standard is needed to serve as a common denominator in terms of which the value of all goods can be expressed. When it is said that the

price of an automobile is \$600, a radio \$30, a hat \$5, and a meal \$1, the exchange power of each commodity in terms of the other is much more simply expressed than if one were obliged to make separate comparisons, stating that an automobile had the same value as 20 radios or 120 hats or 600 meals, while a radio was worth  $\frac{1}{20}$  of an automobile, or 6 hats, or 30 meals. Such cumbersome comparisons hinder trade, and the hindrance becomes progressively worse as the number of commodities and services available for exchange increases.

Not only is a standard of value needed for transactions involving the immediate exchange of goods but for other purposes also. Many transactions involve obligations which must be performed in the future, and some standard is required in terms of which the obligation can be set forth and by which performance can be judged. Among transactions of this kind are rentals, purchasing goods on time, and borrowing money. Then, too, bookkeeping and accounting require some standard unit for recording and calculating costs. A similar unit is serviceable in measuring wealth and income.

*Medium of Exchange.* The exchange of goods is likely to be difficult in the absence not only of a standard of value, but also of a generally accepted medium of exchange. The need of some medium of exchange is illustrated by the experience of Lieutenant Cameron in attempting to buy a boat in Africa:

"Syde's agent wished to be paid in ivory, of which I had none; but I found that Mohammed Ibn Salib had ivory and wanted cloth. Still, as I had no cloth, this did not assist me greatly until I heard that Mohammed Ibn Gharib had cloth and wanted wire. This I fortunately possessed. So I gave Ibn Gharib the requisite amount of wire; whereupon he handed over the cloth to Ibn Salib, who in turn gave Syde's agent the wished-for ivory. Then he allowed me to have the boat."<sup>1</sup>

Hindrances of this kind are unavoidable with barter or direct exchange. In addition there are likely to be difficulties resulting from the fact that the value of the goods one person offers to trade does not correspond with the value of those which

<sup>1</sup> Verney L. Cameron, *All Across Africa*, vol. 1.

another person offers. The more highly specialized activities become, moreover, the greater are the difficulties encountered in bartering. Indeed, division of labor has reached a stage where very little direct exchange is possible. Imagine the predicament of a boiler-maker seeking to trade his services for those of a dentist, or of a bus-driver attempting a direct exchange of his services for admission to a movie.

Specialization does not preclude barter, however, and despite the usual inconveniences of direct exchange it is resorted to in varying degrees from time to time even where extensive specialization prevails. Increased use of barter is likely to occur when the more complex, and ordinarily more satisfactory, mechanism of trade breaks down. During the worldwide disruption of trade following 1929, English and Finnish firms bartered coal and lumber; Argentina and Spain traded wheat for rails; Egypt and Germany exchanged cotton and nitrate fertilizer; the United States Farm Board traded wheat for Brazilian coffee. Domestically, during the same period students in some instances paid their college tuition in potatoes; telephone subscribers paid for their service in poultry. As the depression became more severe, barter associations were formed among the unemployed to facilitate direct trading. An instance of this was the Emergency Exchange Association, Inc., with branches in different communities. In 1933 it was estimated that there were 140 barter exchanges operating in 29 states.<sup>1</sup> But all the barter transactions combined at their height constituted only a small fraction of the business done with money as a medium of exchange.

Not only is there need for a medium of exchange in the everyday exchange of goods; there is need also for a medium which can be accumulated for future use. When a corporation borrows and agrees to pay interest quarterly, it cannot wait until, say, the first day of January, March, June, and September to obtain the means of paying the obligations falling due on those days. Similarly if its bonds fall due in 1945, it cannot wait until that year and use merely its current income for the repay-

<sup>1</sup> *Business Week*, July 11, 1933.

ment. Among individuals the need for accumulation is more often to provide for meeting future contingencies than contracted obligations. So long as individuals produced for their own use they tended to accumulate wealth itself in the form of land, buildings, cattle, and crops. With these their needs for the future as well as the present could be met. But as specialization increased there developed the tendency to accumulate money. This was liquid purchasing power capable of obtaining goods in the future.

#### B. FORMS OF MONEY

*The Materials.* Throughout history there has been a wide variety of things which have served as money. Among savage people beads, shells, and stone arrowheads were used widely, while cattle and skins served with some of the tribes of Old Testament times. Still later, agricultural products, such as tobacco, wheat, and corn, were used. From the days of antiquity metals have served as money. Apparently the baser metals such as iron and tin were first used by some of the ancients. The early Hebrews made their money of copper, mainly, and this was also used at one time by the Romans. But none of the metals were used so widely as gold and silver.

Usually, but not necessarily, the same thing which served as a standard of value was also used as a medium of exchange. The *Iliad* records an instance in which the value or exchange power of two shields was expressed in terms of head of cattle. Here the cattle serve as a means of comparison. In an old ground rent for a piece of property the use of the standard of value as a medium of exchange was optional. The contract provided for "2 11/20 bushels of Merchantable wheat to be delivered in the public market place of Philadelphia or its equivalent thereof in Pennsylvania money at the market price of wheat." Here the wheat was the standard of value, and payment of the obligation could be made either in wheat or in another form equivalent in value.

To a vastly greater extent in earlier days than at present the things which served as money were useful in other ways. In

fact their attractiveness as money rested largely upon their usefulness for other purposes, such as ornamentation, weapons, or food. Thus salt serves as money in equatorial Africa. With the passing of time the commodity importance of money declined. Paper and some metals with little or no commodity worth came to pass freely from hand to hand in exchange for goods and in payment of debt. Today the metal in a silver dollar, for example, is worth considerably less than the face value of the coin, and a paper dollar has no commodity worth other than as a scrap of paper. But this does not necessarily reduce the usefulness of these things as mediums of exchange, although they may not serve satisfactorily as standards of value. In the past, the forms of money which had little or no commodity value could usually be converted quickly into silver or gold, but today in some countries, including the United States, these metals are not available for active circulation.

*Money Qualities of Gold and Silver.* The prominent place which gold and silver have held as money has not been accidental. The outstanding quality which anything must possess to serve in this capacity is *acceptability*, and these metals possessed a combination of qualities which, at the time they came into use, made them more generally acceptable as money than any other commodity. In the first place they were desired for ornamentation. They could easily be worked into forms attractive in design. Ancient gold workers could hammer an ounce of the yellow metal into seven hundred and fifty leaves about three inches square. The metals, furthermore, were easily recognized, they did not deteriorate, their luster was attractive, and their scarcity gave them prestige. These qualities, which contributed to the commodity value of the metals, were also serviceable for monetary purposes. The appearance of the metals was sufficiently distinctive to eliminate confusion, they could be stored indefinitely without loss of weight or quality, a large amount of value was represented by little bulk, thus facilitating transportation and storage, and each metal could be divided into small units without impairing the aggregate value. Unlike crops or cattle, given quantities of

each metal were uniform in value, so that one ounce of gold was as acceptable as another. Finally, but not least important, the value of these metals was more stable than that of other commodities.

While both metals have substantially the same physical qualities for monetary purposes, the preference for gold is accounted for largely by its greater value in relation to its physical volume. Just how much greater value gold has had

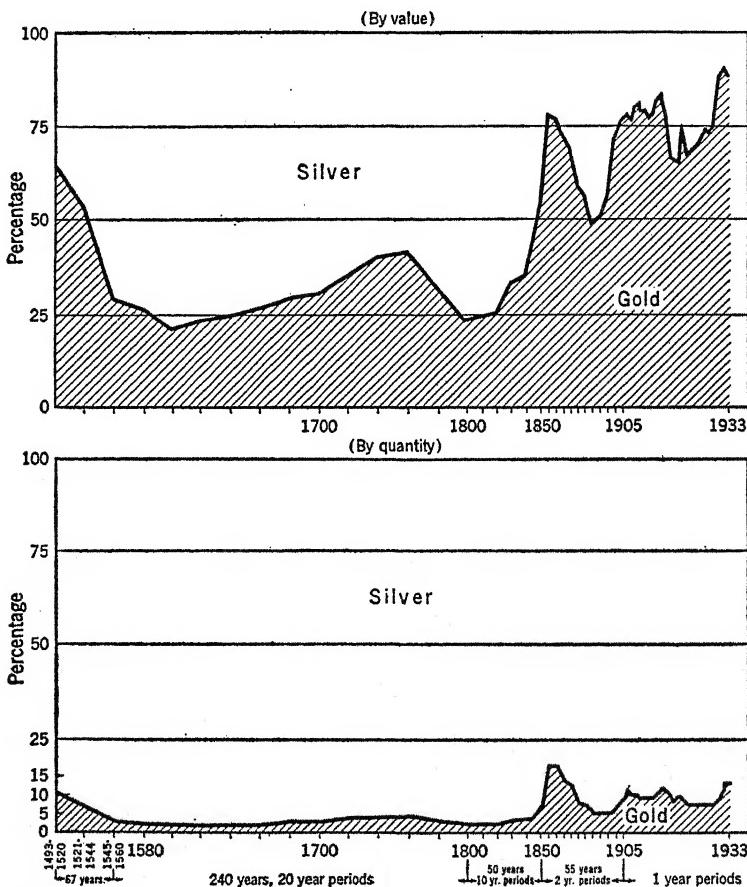


FIGURE 8. RELATIVE WORLD PRODUCTION OF GOLD AND SILVER

Source: *Annual Report*, Director of the Mint.

than silver in relation to the volume of the metals is shown in Figure 8 for the period since the discovery of America. For centuries the production of gold was not more than five per cent of the combined production of gold and silver, and yet the value of the yellow metal was seldom less than 25 per cent of their combined value and often considerably more. At no time has the quantity of gold accounted for more than 20 per cent of their combined production, although in value for nearly a century this metal has accounted for at least 50 per cent, and recently for about 90 per cent, of their combined values. This difference in value relative to quantity becomes increasingly important as the size of business transactions increases, especially in periods of high prices when more of either metal is required to buy the same quantity of goods than in periods of low prices. Ease of transportation and storage strongly favor the use of gold. With gold at \$35 an ounce, only about 1.6 cubic feet is required for \$1,000,000 of metal. The eleven thousand million dollars, or about half of the world's monetary gold, which the United States possessed late in 1936, weighed about 13,000 short tons and in a solid mass could have been stored in a room approximately 26 feet in length, width, and height.

*The Units.* While gold and silver have been the materials most extensively used as standards of value and to a less extent as mediums of exchange, they themselves had to be measured in some way. When slaves were sold for gold a certain number of them were exchanged for a certain quantity of metal. Whether the quantity of commodities be measured by volume, length, or weight, the monetary units are measured by weight. In this respect the drachma of the Greeks and the shekel of the early Hebrews corresponded with the dollar in this country, the pound in England, the mark in Germany, and the lira in Italy. These are merely convenient designations for the monetary units, and in some cases the unit is expressed by symbols such as \$ and £.

A monetary unit, however, does not always represent the same quantity of metal. When both gold and silver served

as standard money in this country, the dollar was 371 grains of silver or 23.22 grains of gold. As between countries a monetary unit does not necessarily represent the same amount of metal. The English pound represents 113 grains of gold as compared with 23 grains for the Canadian dollar. Finally, within the same country the amount of metal represented by the monetary unit may change from time to time. Whereas the dollar in this country at one time weighed 23.22 grains, its present weight is 13.71 grains. When, therefore, it is said that the value of a house in domestic money is \$5000, this means that the house has exchange power equivalent to 68,550 ( $5000 \times 13.71$ ) grains of pure gold. And when a dollar bill is used in paying for a meal, it represents the transfer of purchasing power presumably equivalent to that of 13.71 grains of the yellow metal.

In order further to facilitate domestic trade the Federal Government officially stamps metal and paper in standard denominations. When gold or silver is coined, an alloy of baser metal is added to increase the durability, and the amount of pure metal is expressed in terms of fineness. Thus the official weight of the standard dollar is  $15\frac{5}{21}$  grains of gold .9 fine, meaning that this proportion, or 13.71 grains, is pure gold. When gold circulated, the reliable weighing, testing, and coinage of the metal into standard denominations made unnecessary duplicate weighing and testing of the metal for individual transactions. The stamping of baser metals and also paper increased their general acceptability by minimizing the opportunities for counterfeiting. Both gold and silver have been coined and paper money printed in denominations of a dollar; for larger units gold and paper have served, although paper alone is now available. Fractional currency is entirely metallic, but paper also has been used. Silver has been coined in denominations ranging from three to fifty cents; bronze is used principally for one-cent pieces, and copper has been used for half-cent and one-cent coins. For international trade the uncoined metal known as bullion is used and is accepted on the basis of its weight and fineness.

## II. MONETARY STANDARDS

The monetary standard of a country often refers to the arrangement by which money serves in facilitating trade. Among nations the arrangements are not uniform, and even within the same country the arrangement may change from time to time. Attention will be turned first to the traditional gold standard, after which the new standard which has been established in this country and other proposed standards will be considered.

## A. TRADITIONAL GOLD STANDARD

In spite of the fact that the traditional gold standard has ceased to exist, an understanding of its essential elements, the task it was expected to perform, and the modifications which occurred in it furnish a helpful background to understanding other standards which have been either adopted or proposed.

*Essential Elements.* While there are several varieties of the gold standard, the one prevailing in the United States prior to the World War was most widely used and may be considered the traditional type. Under this arrangement the dollar was a fixed quantity of gold. It has already been noticed that the particular quantity was 23.22 grains, although any other amount might have been established as the unit. In addition, gold could be used without restriction of any kind. In the arts any amount of it might be used for such things as jewelry, and it could be employed in any quantity as money. No barriers of any kind were imposed on either the import or the export of the metal. For convenience provision was made for its coinage, although this in itself did not affect the value of the metal. A given weight of uncoined gold has as much purchasing power as though it were coined. Anyone having gold could take it to the mint and have it coined in unlimited amounts. This was known as "free coinage." For the service, including purifying the metal and furnishing the alloy, a small charge, known as brassage, was made. While mutilation of coins was prohibited, they could be melted into bullion at any time. When, for

further convenience, paper money and coins of other metals were used, they were convertible at their face value into gold at any time. Thus all forms of money were, in effect, tied to gold, whose purchasing power was determined in an unrestricted market.

*The Task.* This seemingly simple monetary arrangement was relied upon to perform automatically a Herculean task. Its operation was expected to control the value of credit-money, link international currencies, and keep foreign trade in balance.

(a) *Control Credit-Money.* As paper money and bank credit came to serve more effectively as mediums of exchange for domestic transactions, some provision was necessary to direct the expansion and contraction of such money in relation to the needs of trade. By using gold as a reserve into which other forms of money were convertible, an automatic control of their expansion and contraction was provided. As gold reserves increased, larger amounts of credit could be extended to finance business operations; as reserves declined, contraction of credit became necessary. In the following chapter these processes will be considered more fully.

(b) *Linking Currencies.* Paper money and coined metal of this country are not generally acceptable in foreign countries, nor are foreign currencies acceptable here. When, however, the same metal furnishes the basis of the units of these different currencies, they are conveniently linked together in terms of purchasing power. When the traditional gold standard was in operation the British pound represented 113 grains of pure gold and the United States dollar 23.22 grains of the same metal. Thus the standard British unit represented 4.86 times the amount of gold in the dollar. Hence there was a par of exchange on the basis of \$4.86 for £1. In a similar way pars could be determined for other countries.

The par value of currencies, however, did not necessarily represent the actual purchasing power of the currencies in different countries. A domestic exporter might agree to sell an order of typewriters in England for £5000. He would, therefore, have a claim to that amount of British currency.

This he could not use in this country until he had converted its purchasing power into dollars. One way in which he could do this would be to arrange for the conversion of British money into gold and the shipment of it to this country where it would be readily converted into dollars. But shipment of the metal involves costs for packing, insurance, and freight as well as loss of interest while the gold is in transit. In the absence of these costs the £5000 would be equivalent to \$24,300 with \$4.86 as par of exchange. If shipping cost him \$150 he would net only \$24,150, in which case the actual conversion was at the rate of \$4.83 for each pound. Consequently, he would have been just as well off if he had sold his claim to English currency to international bankers, so long as the market rate of exchange was not less than \$4.83.

Or suppose a domestic importer purchased a £5000 order of cloth from English mills. One way in which he could settle his obligation would be to convert \$24,300 into gold bullion and ship the metal. If shipping cost him \$150 he would have to spend \$24,450 or at the rate of \$4.89 to convert domestic money into foreign purchasing power. In this case the importer would be just as well off if he were to buy a foreign bill of exchange from international bankers, so long as the market rate for such a bill was not over \$4.89.

In the above illustrations \$4.83 and \$4.89 constitute the "gold points." They are the rates of exchange which determine whether or not gold is actually shipped in payment of foreign obligations. The lower figure is known as the gold import point and the higher as the gold export point. If domestic concerns with obligations to meet in England must pay a higher rate than \$4.89 in order to get what is, in effect, bankers' checks, which are acceptable abroad because of banking arrangements, these concerns will tend to pay their debts by the shipment of gold. Hence the metal will tend to leave the country. On the other hand, if concerns which have sold goods abroad are offered by international bankers a rate of less than \$4.83 for their claims to British money, the concerns will convert their claims to gold abroad and import the metal,

depositing it with their banks as they would foreign bills of exchange. In short, among gold standard countries the actual rate at which the currency in one nation can be converted into purchasing power in another fluctuates around the par value of the currencies, and the cost of shipping gold sets automatic limits within which the fluctuations occur.

Within the limits of the gold points, the actual rate at which purchasing power of one currency can be converted into that of another is determined by a complex network of circumstances. The selling of goods abroad creates a supply of claims to foreign currencies, while buying goods abroad creates a demand for the currencies of those nations. Persons who have claims to currencies generally sell these claims to bankers, from whom, in turn, persons who have payments to make abroad purchase the claims as they require them. The actual rate at which the currencies exchange at any particular time is determined by the volume of claims available in relation to the volume demanded.

(c) *Keeping Trade in Balance.* Foreign trade, like domestic, is essentially an exchange of goods. Often this is not realized since the transactions are generally between individuals and enterprises within the different countries rather than between the countries themselves. Each transaction is settled separately without any realization that it is part of a vast structure with the exchange of goods as its foundation. Moreover, there is usually no central agency or authority by which enterprises are instructed to buy more or to sell more abroad, so as to increase debits or credits between nations. The only guide to their action is the rate of exchange, which determines whether individual transactions will or will not be advantageous to the parties conducting them. Only in the case of Russia does the government officially conduct foreign trade. At the same time, stability of trade requires that debits and credits between nations be kept in balance. Here again the unrestricted use of gold comes into play, generating forces which automatically stimulate the exports or the imports of a nation as may be needed for better equalizing its international trade.

Suppose, first, that a nation, the United States for instance, is selling more abroad than it buys abroad. This means that its citizens and enterprises are receiving, from abroad, merchandise and services, such as shipping, insurance, tourist accommodations, and financial aid, in greater aggregate value than they are furnishing in merchandise and services to foreign individuals and enterprises. Exports of merchandise and other selling create credits abroad, while imports of merchandise and other buying create debits abroad. The former represent claims to foreign currency and the latter represent needs for claims to such currency. With a nation selling more than it is buying, the creation of claims to foreign currency exceeds the need for the claims in settling obligations. Competition in selling claims drives the exchange rates down. As they go down exporters get fewer dollars for the goods they sell abroad and importers are able to buy bills of exchange more cheaply. The former condition discourages selling abroad and the latter stimulates buying abroad.

If the original tendency persists, despite small declines in exchange rates, these rates break through the gold import point and gold flows into the country. At this point more powerful forces are generated to curb the selling and to stimulate the buying of goods abroad. As foreign countries give up gold, they have less international money with which to buy goods abroad. The loss of gold operates to curtail credit and there is a tendency to lower prices. On the other hand, the inflow of gold to the United States increases the amount of international money with which it can buy goods abroad. The larger amounts of gold encourage the expansion of credit, and there is a tendency for the domestic price level to rise. These changes automatically affect trade in that they serve to stimulate the demand for foreign goods and curb the demand for goods furnished by the United States. In so far as price levels abroad decline with the loss of gold, selling in these markets is less advantageous and buying is more advantageous. Conversely, in so far as the domestic price level rises under the influence of additional gold, sales in this country by foreign nations are

stimulated while purchases here are curbed. Thus the original situation, in which the United States sells abroad more than it purchases, cannot continue indefinitely; it is automatically checked by market conditions which curb selling and stimulate buying.

Now imagine the reverse situation, in which the United States buys more extensively abroad than it sells there. The debits created by purchasing would exceed the credits created by selling. Competition for the available claims to foreign currency among those having obligations to pay abroad would be so much increased that the exchange rates would rise. This would operate to encourage more selling abroad and to restrict the buying. Exporters will get more dollars for their foreign claims when the rate of exchange is \$4.88 than when it is \$4.86. This same increase in exchange rates makes imports more expensive, since importers must now pay more dollars to buy the same quantity of goods abroad as could formerly be purchased with fewer dollars. If the increase in exchange rates within the gold points does not exert enough influence to bring about more balanced trade, the rate of exchange breaks through the gold export point and gold leaves the country. The automatic influences created by this movement of gold are just the opposite of those created when trade is unbalanced in the other direction. The outflow of gold curbs domestic credit and tends to reduce prices, while the flow of gold into other countries encourages credit expansion and a higher price level. The higher price level makes foreign markets advantageous for selling and disadvantageous for buying. With a lower price level in the United States exports are encouraged and imports discouraged. This tendency is necessary until a balance is restored, but it likewise cannot continue indefinitely.

*Modifications of Traditional Standard.* The modifications which have occurred in the traditional standard can be set forth briefly. Prior to the World War there had been in general no interference with the use of gold. No regulations were imposed which obstructed its flow in either domestic or foreign trade. But there was an increasing tendency deliberately to

interfere with the influence which gold could exert on the level of prices. An inflow of gold might be prevented from raising prices or an outflow from lowering them. Such interference could not continue long without disrupting the country's gold standard. If the country were buying too much and selling too little for balanced trade, failure to let the price level fall as gold flowed out of the country would continue the maladjustment until the available gold was exhausted. At that point exchange rates would rise until the demand for claims to foreign currency was in harmony with the supply of them. Or, if the country were selling too much and buying too little, failure to let the price level rise as gold flowed in would result in that country's draining the gold from other nations, after which the exchange rates would fall until they reached the point at which the demand for and supply of claims to foreign currency balanced.

With the advent of the World War and its disrupting influence on world trade, extensive modification and even abandonment of the gold standard developed. Many countries were compelled to make their domestic currencies independent of gold and to impose restrictions on the use of that metal as a medium of exchange in foreign trade. In acquiring materials for war, European countries purchased more heavily abroad than they were in a position to sell. The result of this was that international purchasing power of their currencies fell to a point which compelled them to export large quantities of gold. The outflow of the metal soon reached such proportions that the buying nations were being stripped of their gold in the face of increasing need for further purchases abroad. In order to finance additional buying, especially in this country, arrangements were made here for loans. These operated to bolster exchange rates of their currencies so that abroad private concerns which otherwise would have found export sales unprofitable now were able to make such sales on profitable terms. In some cases, as with the pound and the franc, exchange rates were "pegged" or deliberately held at a fixed level which the actual flow of trade would not have supported. The countries

experiencing greatly reduced, if not virtually depleted, gold reserves expanded their credit without regard for their gold holdings. This reached its most extreme form in Germany where at one time 400,000,000 million paper marks were issued against 487 million gold marks.

Following the conflict, divers practices developed with respect to the use of gold. Some countries did not attempt to restore convertibility of their credit currency into gold nor to provide for the unrestricted flow of the metal in foreign trade. Other nations did reestablish gold as a medium of exchange as well as a standard of value, as with England and France, although France virtually restricted the use of the metal to foreign trade by providing for conversion of currency only into bullion and not into coin. By 1931 England was forced to impose restrictions on gold and stabilized her foreign exchange rates by an "equalization fund" with which she bought and sold foreign exchange with a view to deliberately regulating the exchange value of the British pound in terms of foreign currencies. In 1933 the United States nationalized gold, restricted its availability and also employed an "equalization fund" for the purpose of controlling the rates of foreign exchange. Finally in 1936 France was driven to impose restrictions on the exportation of her gold. But even before these more recent direct restrictions were imposed, indirect devices were employed by which gold was prevented from exercising its traditional influence of automatically directing the channels of foreign trade. These devices included the deliberate control of credit, the imposition of tariff barriers when foreign exchange rates were favorable to further imports, the granting of governmental subsidies to exporters, and the devaluation of currencies as means of encouraging exports when foreign exchange rates were unfavorable to selling abroad.

#### B. THE NEW STANDARD

Under the "New Deal" of the Roosevelt Administration, several changes occurred in the monetary standard of the United States. In addition to a devaluation of the dollar,

changes were made which were variously described as "going off," "abandoning," "suspending," and "modifying" the gold standard. In whatever way the changes may be described, the result was that some features of the previously existing standard were retained, others were modified, and still others were eliminated.

*Devalued Dollar.* Under the new arrangement gold was retained as the standard monetary metal, but the amount of gold which constituted the dollar was changed. Congress gave the President discretionary power to reduce the former weight of 25.8 grains by as much as 50 per cent if he saw fit. In 1934, the dollar was reduced 40.9 per cent or to  $15 \frac{5}{21}$  grains of metal 9/10 fine. Thus the dollar was 13.71 grains of pure gold as against the former 23.22 grains.

The effect of this change was not so great as had been anticipated. In domestic trade there was no immediate change of any significance. Internal prices remained the same. Concerns did not revalue their assets on the basis of the new dollar except in the case of gold-mining companies and those companies which used gold as a raw material. Had no publicity been given the matter, the general public would have had no indication that the gold content of the nation's standard dollar had been reduced. But in foreign trade the situation was different. Exchange rates changed immediately. Whereas the British pound, for example, formerly had 4.86 times as much gold as the dollar, it now had 8.24 times as much, so that the par of exchange rose from \$4.86 to \$8.24. At the time this change occurred there were restrictions on gold in both England and the United States with both countries deliberately controlling exchange rates. Under this control the market rates were not affected substantially by the devaluation. A month after it occurred, the rate of exchange was approximately the same, namely \$5.20, as a month prior thereto. For nearly three years thereafter the rate fluctuated between \$4.80 and \$5.10 and was about \$4.90 late in 1936. The devaluation of the dollar did not impair any fundamental characteristic of the traditional gold standard, for under that arrangement any

quantity of gold could be designated as the monetary unit and would serve to link currencies of other countries. But the circumstances surrounding the devaluation altered materially the traditional gold standard.

*Gold Restrictions.* Under the new monetary arrangement restrictions were placed first on the flow or circulation of gold and later on its availability as a basis for credit expansion.

(a) *Circulation.* In 1933, gold was nationalized and an embargo placed on its exportation. With the nationalization of the metal, producers and holders of either coin or bullion were required to turn their holdings over to the government in exchange for other forms of money. This provision applied also to banks, including the Federal Reserve Banks. Private possession of coin (except rare pieces) and bullion was unlawful. At that time the standard dollar was 23.22 grains of pure gold, which with 480 grains of metal to an ounce made an ounce of gold worth \$20.67 ( $480 \div 23.22 = 20.67$ ). This was the price at which the government purchased privately held metal and all metal which was imported or newly produced before the dollar was devalued. Since with devaluation the dollar was reduced to 13.71 grains, an ounce of metal would furnish \$35, which therefore became the purchasing price. Although nationalization did not prevent the use of metal for industrial purposes, such uses had to be licensed by the government, and since the metal naturally became more expensive its industrial use was curtailed. The embargo on the exportation of gold became necessary as a means of preventing the "flight of gold" to evade nationalization, as well as for the purpose of increasing the government's control over international finance.

In domestic trade the elimination of gold as a medium of exchange had practically no significance and was accepted as an official recognition of an already established practice, for gold had long ceased to circulate actively. It was used mainly as souvenirs and for gifts. Much of the metal employed in this way came to be hoarded. At the height of business activity, in 1929, over 90 per cent of the country's gold was in possession of the government and of the Federal Reserve Banks. When

allowance is made for the metal held by commercial and other banks the amount in hand-to-hand circulation becomes negligible.

Although so far as active circulation is concerned, the nationalization of gold meant little more than recognizing officially a factual situation which had come about voluntarily, the change in the use of gold as a reserve was somewhat more important. Here the metal formerly served to some extent as a regulator of credit, by being potentially active. Like reserve troops, it was available for service whenever called; and just as available troops may limit the range of military activity, so the availability of gold limited the expansion of credit. Excessive expansion was somewhat curbed by the potential demand for convertibility of credit into standard metal. The nationalization of gold removed any automatic influence it might exert on credit. This elimination, however, was not so drastic a change as it might seem, since the range within which gold could exert its influence had been declining for years, and consequently the elimination did not remove a force on which there was great reliance for the control of credit. However, the devaluation, causing an increased price of gold, stimulated production of the metal the world over and contributed largely to the increase from eight to eleven billion in the gold stock of this country during 1935 and 1936. Although the government holds this gold, the bank deposits to which it gives rise greatly increase the lending power of the banks and thus the gold provides for material expansion of credit.

The restricted use of gold has its greatest significance in the conduct of international trade. When the United States nationalized gold and placed an embargo on its exportation early in 1933, there was an immediate change in foreign exchange rates. More domestic currency was required to obtain a given amount of foreign currency. The British pound rose almost instantly from about \$3.40 to around \$3.90 and continued its upward course to \$5.20 by the end of the year. During the same period the rate for the French franc increased from four to six cents, and for the Italian lira increased

from five to eight cents. Moreover, when gold does not flow freely between nations there is no force operating automatically to hold foreign exchange rates rather close to the par value of currencies. In the absence of gold points beyond which gold moves into or out of a country the rates of exchange can fluctuate widely and wildly unless they are controlled deliberately. These fluctuations disrupt trade. Importers are cautious in ordering goods lest at the time for payment the exchange rate be higher and they have to pay more for their bills of exchange than they anticipated. Or if they pay at the time they order the goods, the rate of exchange may fall by the time of delivery so that competitors paying at the time of delivery can get the same goods for less domestic money. Exporters also are fearful of making contracts for future delivery lest at the time they have the bill of exchange to sell the rate at which it can be converted into cash be considerably less than they anticipated at the time they accepted the order. There is also the possibility that when exchange rates get out of line they may remain so for considerable periods of time. One result of this situation is that a country may find itself virtually cut off from foreign sources of supply for goods on which it relied, or the domestic market may become flooded with foreign goods which are not needed and which under normal conditions do not come into the market in competition with domestic goods.

(b) *Reserve.* For several years after gold was nationalized, the increased holdings of the government served as a basis for an even greater extension of Federal Reserve credit. This occurred because the government paid for its purchases of gold by drawing on its deposit balances at Reserve Banks and then restoring these balances by depositing gold certificates representing the newly acquired gold. These deposited certificates could be used by the Reserve Banks as reserves for the creation of additional credit. Late in 1936 fear that the increasing gold stock and the large excess reserves of gold certificates would lead to wild inflation resulted in the introduction of measures to sterilize newly acquired gold in the sense of preventing it from automatically increasing the

metal basis for credit expansion. The government ceased depositing gold certificates with the Reserve Banks to build up its deposit balances as these balances were drawn upon in purchasing gold. Instead, the government floated securities and with the funds so obtained reimbursed its deposit balances. Thus, by borrowing, the government drew unto itself a quantity of funds approximately equal to the amount it released in buying gold, and the deposit of the borrowed funds did not increase the lending power of the Reserve System. In this way the increasing stock of gold held by the government was prevented from automatically enlarging the opportunities for further expansion of bank credit.

*Control of Exchange Rates.* In order to avoid the disrupting influence of highly uncertain exchange rates for foreign currency, the United States followed the practice of England and deliberately regulated exchange rates. It did so in part by permitting the exportation of metal when this seemed to be an expedient move. In so far as restricted exportation of metal did not maintain fairly stable exchange rates the government engaged in buying and selling bills of foreign exchange, thus deliberately creating a demand for or a supply of these claims to foreign currency as the occasion required. The funds for this purpose were obtained presumably from the profit the government derived through the devaluation of the dollar, with each ounce of gold increasing in money valuation from \$20.67 to \$35. To what extent the government's foreign exchange operations conceal fluctuations in exchange rates which would otherwise occur is unknown, for there is no information available as to how much has been spent for this purpose. It is reported, however, that the operations are being conducted with a view to bringing about such rates as the normal flow of trade between the countries will support if the operations were discontinued.

It is uncertain that there will be a restoration of the gold standard to the extent that gold will be allowed to flow freely between nations in response to uncontrolled exchange rates, but developments late in 1936 point in this direction. At

that time France, the last of the important financial countries to maintain the gold standard, suspended the free redeemability of her currency in gold. Virtually all nations now had exchange rates which were independent of gold and despite this the fluctuations in rates were held within rather close limits which were not far out of line with those prevailing when England, the world's banker, was forced to restrict the use of gold and to control exchange rates in 1931. Following the abandonment of gold by France, the United States offered to release gold at \$35 an ounce, plus a handling charge, to those countries which met certain conditions including the use of the gold for funds intended to stabilize and equalize exchange rates. Up to November 1, 1936, England and France were the only countries meeting the conditions specified and hence the only ones to which the privilege of purchasing gold in the United States was extended.

#### C. PROPOSED STANDARDS

Whatever the future of the gold standard may be there are other standards which have been proposed including those known as bimetallic, symmetallic, and commodity standards.

*Bimetallism.* Prior to the traditional gold standard, the United States had had experience with a bimetallic standard. The first coinage law, 1792, provided for both gold and silver as standard metals. This was merely giving formal recognition to the prevailing practice which was for the two metals to circulate side by side. At that time the market value of the metals was approximately in the ratio of 15 to 1, meaning that 15 ounces of silver had the same purchasing power as 1 ounce of gold. This ratio was adopted for purposes of coinage, with the silver dollar weighing 416 grains as compared with 27 grains for gold, of which nine tenths was pure metal.

Difficulty developed, however, in keeping the two metals in circulation. The reason for this was that their mint and market values did not correspond at all times. The value at which the metals were accepted by the mint for coinage into stand-

ard money was fixed by law, whereas the value of the metals in the market was determined by the conditions of demand and supply for them as commodities. Therefore when one metal became more valuable as money than as a commodity, it tended to drive the metal with the greater commodity than money value out of circulation. For instance, soon after the bimetallic standard was established with a mint ratio of 15 to 1, the market value changed to around 16 to 1. Thus the mint and market values conflicted; the mint said, in effect, that 15 ounces of silver were as valuable as 1 ounce of gold. But the market, in effect, said that this was too high a valuation on silver, and as metal for commercial purposes 16 ounces were required for the same value as an ounce of gold. Since silver had greater value than gold at the mint and less in the market, the silver tended to be coined and to circulate in domestic trade while gold was either hoarded or melted into bullion and exported. Thus the more valuable metal went abroad or into hiding and the less valuable metal was presented for coinage at the mint and circulated in domestic trade. When later the mint value was changed to 16 to 1 so that it corresponded with the market ratio, the market soon changed to 15 to 1, with the result that gold was now more valuable as money than as a commodity and tended to drive silver out of circulation.

The tendency for some legal tender money to drive others out of circulation was not new. An Englishman by the name of Gresham had previously observed this tendency and formulated what is sometimes known as Gresham's Law or the Law of Money. At first this tendency was attributed to differences in the weight and fineness of the coins. For example, the weight of gold coins inevitably declined through the wear of usage, so that some coins actually contained less metal than others. Under these circumstances the short-weight coins tended to drive the full-weight coins out of circulation. The latter were preferable for hoarding and for shipping abroad as metal. In time, however, it was found that even full-weight coins of one metal tended at times to drive full-weight coins of another metal out of circulation. This occurred when the nominal or

face value of coins differed from their bullion value. Coins of the metal having less bullion than money value tended to circulate, while the coins having greater bullion than money value went out of circulation.

The difficulties experienced by the United States and other countries in using both gold and silver led to an international agreement to eliminate silver as a standard metal. While not a party to the agreement, the United States did eliminate silver in 1873, over half a century ago. To the silver-producing areas of the country the abandonment of silver was known as the "crime of 1873"; it furnished the basis for the famous political campaign of 1896 in which the late William Jennings Bryan charged "Wall Street" (financial interests) with crucifying the masses of the people on a "cross of gold."

But defeat in the campaign of 1896 did not end the struggle to restore silver as a standard metal. Persistent pressure has come from the silver-producing interests, who seek the market which restoration of the metal would furnish. The advantage of the additional market to them is suggested by Figure 9, which shows the number of ounces of silver which, since 1700, is equivalent in commercial value to an ounce of gold. Following the abandonment of silver in 1873, its commercial value declined, and it reached its lowest point in 1932, when 73 ounces of the metal were required to equal in value 1 ounce of gold. At the same time the figure indicates the high degree of instability which would have to be overcome if silver were to be used as a monetary metal. In view of the fact that increasing instability developed prior to 1873, the condition cannot be attributed entirely to the abandonment of the metal as standard money, although after 1873 this contributed greatly to the fluctuations. Some authorities, however, believe that the return to a bimetallic standard would be the most satisfactory monetary arrangement, provided that standard were adopted throughout the world. Such an agreement seems extremely unlikely at present.

*Symmetallism.* Realizing, apparently, the unlikely restoration of the bimetallic standard, the silver interests have urged

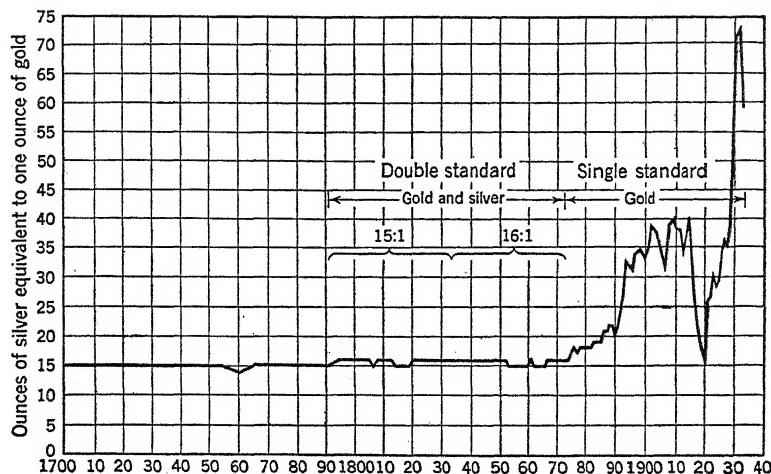


FIGURE 9. COMMERCIAL VALUE OF SILVER TO GOLD

Source: *Annual Report*, Director of the Mint.

the adoption of an arrangement which is known as symmetallism. As long as the government maintains a profitable market for the white metal these interests will be satisfied; but the best assurance of such a market is to bind silver with gold in some way so that one metal cannot drive the other out of circulation. To accomplish this it is urged that standard coins be a physical combination of the metals in some such proportion as 75 per cent gold and 25 per cent silver. In the event that paper money is used in place of metal, the metal reserves for the paper money would be gold *and* silver in the same proportion as in coins.

The significance of this arrangement does not lie in its merit as a monetary policy, but in the possible political support that may be developed for it in the "pork barrel" process. At least without international agreement it would serve no purpose other than furnishing a subsidy to the silver-producing industry. On this basis the paper industry might, with equal merit, urge the use of paper for small change money.

*Commodity Standard.* It is generally agreed that the metallic

standards of the past have not been entirely satisfactory, and it is the belief of some that the crux of the difficulty lies in the fixed amount of metal which constitutes the dollar or other monetary unit. To meet this difficulty proposals have been made to shift the standard of value from one having a fixed amount of metal to one having a fixed amount of purchasing power. Professor Irving Fisher has proposed a plan by which gold would continue to be used as the standard metal, but instead of the dollar's being a fixed amount of gold the amount would vary according to the level of prices. Thus a dollar would always have a stable purchasing power. For the operation of the plan coined gold would be withdrawn from circulation except for international trade. At short intervals the official weight of the dollar would be changed on the basis of an index of prices. Suppose at one time the dollar represented 12 grains of gold and with that weight prices rose 5 per cent. By increasing the amount of gold to 12.6 grains the revised dollar would have the same purchasing power as the 12 grains had formerly. If prices declined the amount of gold in the dollar would likewise decline. The difficulties in the operation of this plan have been such that it has served mainly in stimulating discussion of means by which stabilized purchasing power might be attained.

It is the belief of some, however, that a metallic standard should be abandoned entirely and that a completely managed currency should be used. In so far as gold is needed for international trade it could be obtained by purchase in the same way as any other commodity. For internal trade the expansion and contraction of credit would be openly and frankly managed by a central authority with a view to maintaining stable purchasing power for paper money. Such a plan likewise presents difficulties for meeting which adequate facilities have not as yet been developed. The fact is that the present monetary arrangement comes closer to furnishing an entirely managed currency than appears on the surface.

It might be well for those persons who view gold not merely as a monetary convenience under certain circumstances but

also as absolutely essential for a sound currency to consider the story of the imaginary island to which the gold stock of the world was taken for safekeeping. Just as individual nations have internal arrangements by which there is very little occasion to ship gold from one section of the country to another, so the nations of the world are supposed to have agreed that shipping the metal back and forth among themselves was an unnecessarily cumbersome and expensive means of settling trade balances. To further facilitate trade they agreed to build a single vault somewhat similar to that recently constructed by the United States at Fort Knox, Kentucky. A remote island was selected as an ideal location for the repository which was mechanically guarded by electric eyes and poisonous gases. To this island the nations of the world shipped their monetary gold under the direction of an international organization similar to the present Bank of International Settlement and from this organization each nation received certificates for the amount of gold deposited. After many years it was found that the island had disappeared and investigation disclosed that the event had occurred several years before it was discovered. During these years the loss of the gold did not in any way impair the soundness of the world's currencies.

If the sudden disappearance of the gold seems too fantastic for serious consideration, there is the more realistic possibility that the metal may lose much of its present value. It is quite conceivable that through the application of science a process may be devised by which gold could be produced synthetically in such large quantities and at such low costs as greatly to reduce the value of gold and seriously impair, if not completely destroy, its serviceability as a monetary standard.

In short gold has no magic power in the monetary structure. It is capable of facilitating or of retarding trade depending upon the surrounding circumstances. Neither blind acceptance nor hasty rejection of it is wise. The selection of a monetary standard should follow careful balancing of merits and defects of alternative arrangements and should take into consideration

the probable conditions under which these arrangements will be required to operate both nationally and internationally.

### QUESTIONS

1. What is the paramount function of money?
2. How does money perform its function?
3. Do you agree with the statement sometimes made that "money is essential for trade"? Explain.
4. "The things used as money today are often essentially different in at least one common respect from the things used as money in earlier times." What is meant by this statement?
5. What qualities did gold and silver possess which made them especially acceptable as money in earlier times?
6. Why are the qualities possessed by gold and silver less essential for money today than they were previously?
7. What are the essential elements in the traditional gold standard?
8. Do you think a nation could have had a gold standard if no provision were made for the coinage of the metal?
9. What was the task which the gold standard was expected to perform?
10. "The gold standard which was abandoned by the United States in 1933 was not the gold standard with which the world was familiar prior to the World War." What modifications had come to be made in the traditional monetary standard?
11. Many countries have "devalued" their monetary unit. What is meant by this?
12. Does a nation "go off the gold standard" when it devalues its monetary unit?
13. What is meant by the "nationalization of gold"?
14. Has the restricted use of gold for monetary purposes had any significant influence on trade?
15. What is meant by Gresham's Law of Money?
16. What is meant by bimetallism and what difficulties were encountered when the United States employed such a monetary standard?
17. How does symmetallism differ from bimetallism?
18. Is there reason to believe that silver is essential for a satisfactory monetary standard? If so, why? If not, what accounts for the persistent effort to have silver re-established?
19. What particular defect of a metallic standard does the commodity standard seek to correct?
20. "Gold is important for a sound monetary system only so long as people think it is important." What is meant by this statement? Do you agree with it? Give reasons.

## CHAPTER VI

### CREDIT

IN THE preceding chapter the basic function of money was discussed, and also some of the monetary arrangements under which the function has been or might be performed. Particular attention was given to the use of metal as standard money, although the increasing use of credit money was noted. The present chapter deals more extensively with credit money, which is a part of the general credit structure.

#### I. THE GENERAL CREDIT STRUCTURE

##### A. MEANING OF CREDIT

In a popular sense, credit means getting something now and paying for it later. While the statement does not express adequately the nature of credit, it does imply the essential element, which is a promise. This may be written or implied and may or may not be legally enforceable. Credit itself is a relationship by which a promise of future performance serves to consummate a present transaction.

These credit relationships extend over a wide range of transactions. One of the most familiar occurs when money is lent on the promise of the borrower to repay it at a future time. Another involves the sale of goods on time, in which case the purchaser receives goods in exchange for a promise of future payment. Property is rented by means of a variety of leases, most of which involve credit. When homes, offices, factories, or farms are leased, their use is lent for a period of time in return for promises of rental payments. Another type of credit transaction arises with insurance contracts. Under the terms of these contracts individuals make payment in the present for promises of future payment when and if certain events arise.

The foundation of these credit transactions is confidence not only in the promisor's willingness to carry out his obligation but also in his ability to do so. Sometimes confidence is based upon the reputation gained by past performances of individuals or enterprises, but generally the belief or knowledge that certain individuals possess exceptional financial ability increases the confidence of future performance. At times this confidence plays only a minor part as with transactions in which collateral is pledged for faithful performance of the obligation. Here primary confidence is placed on the value of the collateral, although there may be confidence also that the debtor will meet his obligation voluntarily and thus make forced liquidation of the collateral unnecessary.

#### B. SIZE OF CREDIT STRUCTURE

Probably the most striking and significant feature of the modern credit structure is its size. Just how large it actually is cannot be fully determined because of the complex nature of the transactions involved. Some obligations, for example insurance policies, are of a contingent nature. The obligation may be contingent on the happening of some future event, such as death in the case of life insurance; or on the extent of the loss, as with fire insurance. In 1933 life-insurance policies alone were estimated to be more than 100 billion dollars, to say nothing of fire, casualty, and numerous other forms of insurance which together run into huge sums. The amount of credit transactions which involve such debtor and creditor relationships as lending money or selling goods on time can be more easily estimated. In 1933, internal debts, or those arising within the country, were estimated to have been nearly as great as the national wealth. Long-term debts were probably around 134 billion dollars, with the interest-bearing obligations of federal, state, and local governments accounting for only 25 per cent of this amount, private debts being responsible for the balance. Short-term debts amounted to an additional 104 billions.<sup>1</sup> For the same year an estimate of the national

<sup>1</sup> Evans Clark, *Internal Debts of the United States*.

wealth placed its money value at 250 billions.<sup>1</sup> On this basis the long-term debts amounted to more than half the wealth, and if the short-term debts be added the total internal indebtedness of the country was equivalent to more than 90 per cent of the national wealth. In 1914, about two decades before, debts of the same type did not amount to half the national wealth.

It must be realized that pyramiding accounts in part for the size of the debt structure. If an individual lends \$5000 to the purchaser of a home, a debt of only \$5000 results. But if, instead of a direct loan, the money is deposited in a savings bank and is then lent by the bank to the home purchaser, a total indebtedness of \$10,000 results. The bank owes the depositor \$5000 and the borrower owes the bank \$5000. Similar pyramiding occurs when a parent corporation borrows money on its own credit and then lends the sum it has borrowed to its subsidiary companies. This pyramiding increases in some respects and decreases in others the significance of the debt structure, but operates in any case to form an increasingly complex and inter-dependent network of obligations.

### C. CREDIT INSTRUMENTS

In connection with the many transactions which constitute this vast credit structure a wide variety of documents or credit instruments are employed, some of them being used more frequently than others. A broad distinction is drawn between the credit instruments used for investment and those used for commercial purposes.

*Investment Instruments.* For investment purposes the chief credit instruments are bonds and stock certificates. These instruments are often given the general designation of securities. They set forth the terms and conditions on which funds have been furnished by investors. While only bonds are, in a legal sense, credit instruments, the difference between them and stock certificates is often of slight economic importance.

(a) *Bonds.* Bonds are promises to pay money, and hence

<sup>1</sup> National Industrial Conference Board.

represent a debtor and creditor relationship between borrower and lender. Among private enterprises these instruments are used more extensively by railroads and other public utilities than by manufacturing and trading enterprises. Frequently a bond issue is designated by the particular purpose for which the borrowed funds are to be used; for example, construction, equipment, improvement, or refunding bonds. The latter refer to new borrowing for the purpose of paying off maturing debts. Some bonds give the holders general claims against any assets of the corporation in the event that it defaults in the performance of its promise. Other bonds provide claims only against particular assets, such as real estate or other physical property, in the case of mortgage bonds, and of securities which the corporation owns in the case of collateral trust bonds. Then too there may be differences in rank as with first- and second-mortgage bonds, in which case holders of the latter can claim only as much of the mortgaged property as is not required to settle the claims arising under first-mortgage bonds. The duration of bonded obligations also varies, but is usually at least five years, and in some cases the loan is virtually perpetual or entirely so. The Commercial Cable Company borrowed for 500 years, the Elmira and Williamsport Railroad for 999 years, while the Public Service Corporation of New Jersey borrowed for an indefinite period of time which virtually makes the loan a perpetual investment.

Ordinarily bonds provide not only for repayment of the principle at a specified time, but also for the periodic payment of interest, with failure to make either payment constituting a default. In some cases, however, as with income bonds, the payment of interest is compulsory only when the earnings of the corporation provide the required funds. Usually bond-holders have no interest claim beyond the designated rate, although there are exceptions, as with participating or profit-sharing bonds. In addition to the provisions pertaining to the use of funds, security for the loan, time of repayment, and interest obligations, there may be other conditions, such as the lenders' privilege of converting bonds into stock, or the

borrowers' privilege of calling the bonds for repayment prior to maturity.

(b) *Stock Certificates.* The instruments which represent most of the long-term investment in private enterprises are certificates of stock. These are usually thought of as representing the claims of owners rather than of creditors and are therefore not considered as credit instruments. However, the status of shareholders today is frequently not that associated traditionally with either owners or creditors, but it is something between these two extremes. In this shift the certificate of stock is often more nearly a type of credit instrument than it is an instrument of ownership. When corporations were first used for business purposes, there was only one class of shareholder; the designations common and preferred were unknown. Each share represented the same proportionate interest in the enterprise as any other share. Each represented the same investment, the same right to vote and thereby participate in the control of the business, the same claim to earnings and to the net assets upon liquidation of the undertaking. Although the investments were made in expectation of dividends, there was no promise of returns on the investment. Later, preferred stock developed with its promise of a designated return if there were any earnings. In the absence of specific provisions to the contrary these claims to dividends were cumulative, which meant that failure of the corporation to pay the agreed return at designated times gave the preferred shareholders a claim to earnings for unpaid dividends before the ordinary or common stockholders were entitled to any return on their investment. It is not particularly surprising that when such prior claims first came into use the stock certificate was often viewed as a form of mortgage or creditor claim.<sup>1</sup> Still later the right of the shareholders to vote was often eliminated. This situation developed first with preferred stock if agreed dividends were paid. Later the elimination of the right to vote spread to common stock, even though in some instances there was

<sup>1</sup> See George H. Evans, Jr., "Early History of Preferred Stock," *American Economic Review*, March, 1929.

a failure to pay dividends. Then, too, some shares are redeemable, which means that such claim as the holder may have is liquidated at the will of the corporation, just as in the case of callable bonds.

Not only legally, but also economically, certificates of stock often represent more nearly creditor than owner relations. Although the corporation is technically an organization subservient to the will of its shareholders, such control is often more apparent than real. It is quite possible, as will be seen later, for large corporations to act with considerable independence of the shareholders, even when the shareholders have voting rights. Consequently, the control which was traditionally associated with ownership may not, and often does not, exist actually. Furthermore, the circumstances under which certificates of stock are purchased from corporations are often such as to be essentially of a credit nature. Within the last twenty years shares have been offered extensively to the general public and deliberate appeals have been made to small investors including customers and employees. The publicity and solicitation by which many stock issues were floated might be interpreted with justification by such investors as constituting promises that the savings of the investors would be protected and that dividends would be paid thereon. The fact that the corporations officially made no expressed promises of this kind nor even any implied ones which were enforceable at law does not alter the further fact that corporate actions and policies were often designed to create and did create in many instances a degree of confidence on the part of investors which resulted in the exchange of cash for stock certificates. In other words, the circumstances which induce most small investors, and some larger ones, to place their funds at the disposal of corporations are of a credit nature, even though the resulting claims to earnings and assets may be those of owners instead of creditors.

*Commercial Instruments.* The distinctive feature of commercial credit is the comparatively short period of time within which the contracted future obligation is to be performed and

the relatively small size of individual transactions as against those involving investment credit. The evidence of these transactions is found chiefly in book accounts and such instruments as notes and drafts.

(a) *Book Accounts.* A type of commercial credit arises when the password "charge it" serves to consummate present transactions. These transactions are recorded by means of book entries which are designated as book accounts, or sometimes as open book accounts to indicate that the transaction is only temporarily complete. On the balance sheet of enterprises credit of this kind appears as accounts receivable in the case of the creditor and as accounts payable with the debtor. The recording of transactions in books of record does not give rise to credit instruments which are negotiable. The claims represented by book records can usually be converted into cash only by payment of the debt. Under some circumstances the claims are used as security for borrowing and in some cases they are sold, but this use is not common, especially since the mere recording of a debt is not proof of its existence.

(b) *Notes.* In many respects commercial claims are more dependable when they are represented by the debtor's written and signed promise to pay. A promise expressed in this way becomes a document called a note. In order that the document may constitute a negotiable instrument, however, and thereby permit the claim to be readily salable prior to maturity, there are certain conditions which must be met. For negotiability the written and signed promise must be an unconditional promise to pay a definite sum of money at a determinable future time either to the bearer or to the order of the one to whom it is issued. Whether the note was given in return for goods purchased or on receipt of borrowed money does not in any way affect the negotiable character of the instrument. Like bonds, notes may have specific security, often warehouse receipts or chattel mortgages. Thus, a farmer with grain stored in grain elevators may use the elevator receipts as security for borrowing in the same way that he might use stocks or bonds. When notes are used for commercial transactions,

they usually run for periods of thirty, sixty, or ninety days, but seldom for more than six months. Often the obligation may be renewed so that in effect notes may become instruments for longer-term credit than is indicated on the face of them. In some instances, however, notes are used for periods up to five years. In the raising of cattle and for some other agricultural purposes loans up to three years are quite common. Such credit is sometimes known as intermediate credit, since its duration is between that of customary commercial credit and investment credit. Some industrial and commercial enterprises also float or sell note issues for investment purposes when the period for which funds are wanted is less than about five years and the amount required is comparatively small.

(c) *Drafts.* For some purposes an instrument known as a draft or a bill of exchange is employed. In itself it is not strictly a credit instrument as it is not a written promise to pay, but is rather a written order to pay. A well-known example of a draft is a check by which a depositor orders his bank to pay a specified sum to a designated party. Instruments of a similar kind are often used between manufacturers and dealers or customers. When General Motors ships cars by rail to a dealer, an order is likely to be written instructing the dealer to pay a designated amount to a bank in his locality. This order is then attached to the railroad bill of lading which is in effect a warehouse receipt for the cars and is sent to the bank. When the dealer pays the bill, he is given the bill of lading which entitles him to take possession of the cars at their point of destination. If these cars had been sold to the dealer on time, the order might have stated the future time at which payment was to be made, and the draft, instead of being sent to the bank for collection, would have been sent for acceptance by the dealer. By writing the word "Accepted" and his name across the face of the draft, the dealer converts it into his promissory note. In some cases business concerns desire to make their accounts receivable more liquid in the sense of being capable of conversion into cash prior to the time of payment, or may desire to be more certain that the obligation will be paid at the time agreed upon. To ac-

complish this result, they may request their customers to furnish a note, or to accept a draft drawn upon them. When drafts are used in this way they are often known as trade acceptances. Banks have accounts among themselves which enable them to draw drafts on each other, and these bankers' drafts may be sold to customers and used as a means of making payments. Foreign bills of exchange are used extensively in international trade.

#### D. CREDIT INSTITUTIONS

In conducting or making possible credit transactions so complex an arrangement of financial institutions has developed that it is impossible to consider here any more than the leading types.

*Savings Banks.* The basic purpose of savings banks is to encourage thrift by furnishing facilities for the accumulation and safe-keeping of savings on which interest is paid and for the withdrawal of both savings and interest at their face value on short notice. Most of the funds entrusted to such institutions come from persons with modest or little income and to whom safety of their principle is of primary importance. While there is always some withdrawal of savings, the accounts are likely to be highly inactive, partly because the funds represent savings and partly because of the notice required for withdrawal. Therefore, since the accounts are inactive, the bulk of deposits is available for investment in high-grade mortgages and bonds.

*Commercial Banks.* Commercial banks are the institutions with which the greatest number of people come in contact both as depositors, and, to a lesser extent, as borrowers for short periods of time, principally for business purposes. In fact, these institutions are also known as banks of "discount and deposit." They receive deposits payable either on demand or on time. The former are more frequently called checking accounts, and the latter, for the withdrawal of which notice is usually required, include deposits of business enterprises as well as thrift savings. When concerns are accumulating or holding funds for future needs, they are likely to deposit them as time ac-

counts because of the advantage in interest rate. Banks whose deposits are guaranteed through the Federal Insurance Deposit Corporation are not permitted to pay interest on demand deposits. Unlike savings banks, commercial institutions are in a position to lend their own credit in addition to funds deposited with them. This aspect will be considered later. These banks also accept and issue drafts, and the larger institutions are likely to engage in buying and selling foreign exchange. Quite independent of their financial activities, they engage in renting safe-deposit boxes for the storage of documents, money, jewelry, etc.

*Trust Companies.* Some banks, usually known as trust companies, serve also in the capacity of trustees. As such they perform a variety of services, acting as executors and administrators of estates, custodians of funds and other property held in trust, guardians of minors, etc. Trust funds come into their possession which they must invest according to their instructions as trustees. Most trust funds are available for relatively long-term investment and are employed largely in the purchase of mortgages and bonds. In addition to receiving and investing trust funds these institutions often furnish protective services, such as surety bonds and title insurance on real estate. The wide variety of activities performed by trust companies has caused them to be called the "department stores of finance."

*Clearing Houses.* Cooperative organizations among banks, known as clearing houses, are maintained for the purpose of facilitating the operations of the banks. Checks and other claims deposited with a bank for collection must be collected from the various banks and other agencies on which they are drawn or which have promised to make payment. Daily each bank acquires an assortment of such claims against other banks. The clearing house provides a place at which the presentation can be made of claims against members and at which settlement of claims is made by bookkeeping entries. The members have deposits or accounts with the clearing house, and it debits a member's account with claims drawn against that member and credits the account with claims which the

member has against other members. If in the settling of claims a member's account at the clearing house is overdrawn the member makes a further deposit; or if the balance is larger than needed, the member may withdraw a part of it. Thus the settlement of inter-bank obligations is facilitated. For members of the Federal Reserve System this service is performed by the Federal Reserve Banks. In some cases the clearing-house activities include periodic financial examination of the members and at times the clearing-house organization acts as a medium for united action on any matter of common interest to the members.

*Insurance Companies.* Life, fire, and casualty insurance, as well as other forms, are generally provided by organizations which operate on what is known as an actuarial basis. Past experience is used in estimating the probable occurrence of the events against which financial protection is sought. On the basis of this experience funds are collected in the form of premiums and set aside as reserves in anticipation of the event. These reserves are not placed in a vault, but are invested mainly in high-grade mortgages and bonds, especially government issues.

*Investment Trusts.* Following the World War a new type of financial institution, known as the investment trust, developed in this country. It provided a means by which numerous individuals could pool their funds for purposes of such diversified investment as would furnish greater safety of principle and stability of income than could be obtained by individual investment. Originally a trust form of organization was used, which accounts for the word "trust" in the title. The term "investment" presumably distinguishes these trusts from holding trusts, whose main purpose in purchasing securities is to control the policies of the enterprises whose securities they hold. Rather quickly the corporate form of organization came to be used, although the designation "investment trust" was retained. Under this arrangement individual investors transfer their funds to the corporation by purchasing its shares of stock. In some instances these corporations do purchase securities for the pur-

pose of controlling other enterprises and in some cases virtually or actually function as investment houses. In any event they usually have large sums for investment in securities of business enterprises.

*Investment Houses.* Most public agencies and private enterprises requiring heavy long-term financing do not have the facilities for contacting investors, and often funds are wanted before they could be available through sale of the bonds or stocks to investors. Investment houses specialize in underwriting and distributing securities. By underwriting is meant making funds available prior to the marketing of securities. This amounts to the initial purchase of the securities by investment houses after more or less careful investigation of the economic and legal status of the issues. If an issue is larger than a single house cares to handle alone, a syndicate is formed. This is a type of temporary partnership in which several investment houses associate themselves only for the purpose of handling that issue. Following the underwriting the houses proceed to employ their organized facilities, including their contacts with prospective investors, in selling the issue to those having funds to invest in long-term securities.

*Agricultural Institutions.* The financial requirements of agricultural activity have certain peculiarities which are not cared for satisfactorily by the facilities suitable for most other types of business. In the first place, land mortgages are an important form of rural credit, although for a number of years there was no market in which these could be converted into cash readily and on reasonable terms. Provision for this need was made by the Federal Land Banks, which furnished funds for farm mortgages through local Farm Loan Associations. On the basis of the mortgages which the Federal Land Bank accepted, it issued bonds which were sold in the general investment market. In the second place, raising cattle and crops often requires trade credit for more than the few months which suffice for most commercial purposes. For instance, in breeding and raising cattle, loans of several years' duration may be needed. To meet such needs the Federal Intermediate Credit

Banks were established. These institutions do not deal directly with individual farmers, but through cooperative associations and local financial institutions.

*Security and Produce Exchanges.* The continuous market furnished by the facilities of these exchanges contributes both to the creation of short-term and of long-term credit and to the liquidation of credit instruments. Operations conducted on the produce or commodity exchanges give rise to contracts most of which call for performance at some future time. These claims serve as a basis for short-term credit which can be quickly converted into cash. Without security exchanges availability of funds for investment and facilities for borrowing would be materially reduced. Commercial banks are willing to lend money at any time if stocks and bonds which are registered on the exchanges are furnished as collateral. Such collateral can be promptly liquidated in the event of default on the part of the debtor. The deposits of savings banks and the reserves of life-insurance companies can be put to work and yet be almost instantly converted into cash when invested in securities which are traded on the exchanges.

*Brokerage Houses.* Brokerage houses are intermediaries in the trading process. In some cases they do not perform services which cause them to be considered as a credit institution. A fruit and vegetable broker may receive consignments of oranges which he sells directly to wholesalers and jobbers. When, however, brokerage concerns provide public access to the organized produce and securities exchanges they function as a type of credit institution. These concerns are usually partnerships one or more members of which are also members of an exchange. Through exchange membership the concern is able to execute orders for its customers, thus giving them access to the exchanges. Through these houses arrangements may also be made for buying "on margin." Not infrequently the members of brokerage concerns engage in considerable trading on their own account.

*Consumer Loan Institutions.* Thus far emphasis has been on the institutions which, in one way or another, contribute to

meeting the financial needs of business, but there are also some institutions whose activities are directed mainly to the needs of ultimate consumers. Among these some specialize in financing the purchase of particular kinds of property such as building and loan associations and automobile finance corporations. The oldest lenders of money to consumers were the pawnbrokers. They generally buy small personal property such as jewelry on the condition of returning it within a specified time at a higher price. There are also finance companies which will lend money on chattel mortgages with such property as furniture as the chattel, or, like Morris Plan Banks, lend on notes signed by borrowers and some endorsers. Some household or small loan corporations also lend on notes accompanied by assignment of wages or salary as security.

*Federal Reserve System.* Last, but not least in importance, is the banking arrangement known as the Federal Reserve System, which serves to increase the safety and stability of the general credit structure and particularly that created by commercial banks which are members of the system. Its operations will be considered presently.

## II. CREDIT-MONEY

Credit-money is a part of the general credit structure, but holds a peculiar relation to it. In part, such money is used to liquidate forms of credit which in themselves do not serve as money, and in turn various types of credit which do not constitute money may serve as a basis for the creation of credit which possesses the requirements for money.

### A. REQUIREMENTS FOR CREDIT-MONEY

It has been previously observed that acceptability is the prime requisite for money which is to serve effectively as a medium of exchange. This applies no less to credit than to standard money. But the acceptability of the former rests on a somewhat different foundation from that of the latter.

*Confidence.* The early acceptability of gold and silver as

money was not based on confidence. The metals possessed certain physical qualities which, it will be recalled, made them useful especially for ornamentation, and from their commodity usefulness they derived acceptability as money. Later greater stability of value was attributed to these metals than to other commodities. Whether or not the stability was in reality as great as it appeared, there came to be a mystic confidence in the metals themselves. Certainly whatever stability of purchasing power they had in the early days of trade was unplanned and did not depend on the performance of any obligations. This is not the case with credit-money. Its acceptability did not depend on its own purchasing power but on that of the standard metals. The opportunity for conversion into the latter gave rise to a type of confidence in the former. The opportunity for conversion, however, depended upon the performance of an obligation, namely, keeping the amount of credit within such limits that standard metal would be adequate in amount to meet claims for conversion. When standard metal ceased to be readily available for circulation, the nature of the obligation which affected the acceptability of credit-money changed somewhat. Instead of merely holding credit within the limits of convertibility at face value into standard metal, there came to be an obligation so to control the volume of credit that its units would have a general purchasing power sufficiently stable to inspire confidence in the use of such money as a medium of exchange.

*Convenience.* A satisfactory medium of exchange has always had to have the element of convenience. The preference for gold and silver over other commodities was in part the convenience of carrying or storing large value in little weight or bulk. But even more convenient forms of money are required as trade becomes larger in volume, more extensive in scope, and more complex in nature. While gold will probably be accepted for years by nations in payment of international obligations, the metal cannot be said to be even a suitable medium of exchange for most individual transactions, across political borders. Various arrangements, including the use of drafts and the "ear-

marking" of gold, serve to minimize the actual shipment of metal in foreign trade. By "ear marking" is meant the transfer of legal title to gold without physical transfer of the metal to the new owner. In domestic trade the metals are still less satisfactory in that there is either the personal inconvenience of carrying them around or the cost of their transportation as freight.

Not only less weight and bulk are required but other qualities as well. For some purposes it is still highly desirable to have a medium of exchange capable of continuous circulation. This requires standard denominations and absence of any formality in passing the money from hand to hand in exchange for goods and payment of debt. These requirements are met by paper money and subsidiary coins for small change. Such money is especially serviceable in most retail trade and in paying labor, but is not well suited for the payment of debts between business enterprises, nor for the payment of interest and dividends by corporations having a large number of security-holders. For many transactions standard denominations and continuous circulation are distinct disadvantages. Much more serviceable are instruments such as checks, which can be drawn for the exact amount of debts and which require the formality of endorsement for their transfer. Aside from reducing the risks of loss through theft, the use of these instruments reduces controversy as to whether or not an obligation has been paid. It must, however, be realized that while the cost of transporting these instruments is negligible there are considerable costs incurred in providing the banking facilities which make possible the use of checks and other instruments which take the place of standard money as a medium of exchange.

#### B. CREATION OF CREDIT-MONEY

*The Agencies.* In this country private, semi-private, and public agencies create obligations which serve as money. About 99.99 per cent of the agencies are privately owned and managed banks. In 1935 the Controller of the Currency reported sixteen thousand active banks with which the public

deals in various ways such as making deposits, cashing checks, borrowing money, etc. Most of these are commercial institutions, such as National Banks, and create a type of credit-money. Since 1914 the country has been divided into twelve financial areas with a Federal Reserve Bank in each district. These are semi-private institutions. They are privately owned, but the government shares in their management. The only public agency whose credit obligations serve as money is the Federal Government.

Of these three groups, the private agencies are not only the most numerous but the most important from the standpoint of the amount of monetary credit created. Their importance in relation to the Federal Reserve Banks and the United States Government is shown in Figure 10. In 1935, for example, the deposits in all active banks amounted to about \$50,000,000,000, as compared with around \$10,000,000,000 in deposit and note obligations of the Federal Reserve Banks and about \$2,000,000,000 in similar obligations of the Federal Government. The

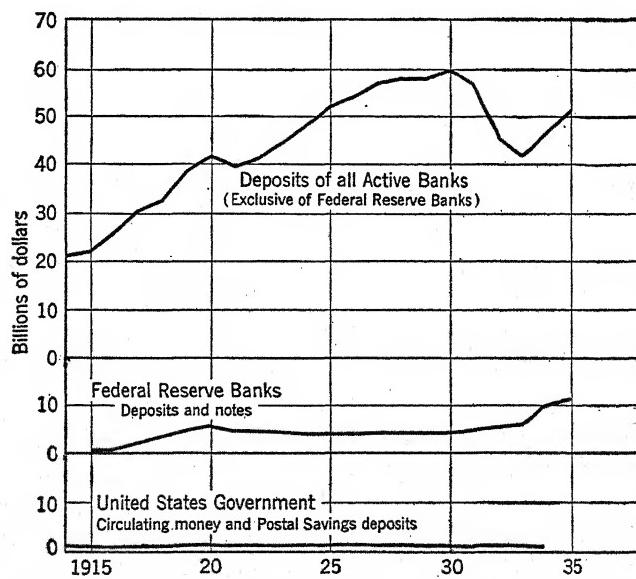


FIGURE 10. MONETARY CREDIT AND WHO CREATES IT

importance of Federal Reserve credit is, however, considerably greater than its amount suggests, since some forms of it can be used as reserves for the creation of commercial bank credit.

*Types of Instruments.* Credit itself is an abstract relationship which can be readily circulated only by means of tangible instruments. Aside from the government credit represented by coined metal, the instruments used are printed paper. These instruments may be in the nature of receipts, notes, or orders.

(a) *Certificates.* Gold and silver certificates are technically warehouse receipts. On their face they certify to the deposit of either gold or silver with the Treasury and provide for the payment of the respective metal to the bearer of the instrument on demand. Silver certificates continue to be issued for circulation although there is no incentive to redeem them since silver is not a standard metal and the value of the certificate is considerably greater than the value of the metal they represent. In 1933 redemption of gold certificates was abandoned and the certificates withdrawn from circulation, although they may be held by Federal Reserve Banks in lieu of gold reserves.

(b) *Notes.* Notes are non-interest-bearing instruments which on their face express a promise to pay a designated number of dollars to the holder of the instrument on demand. Formerly such instruments were issued by National Banks, Federal Reserve Banks, and the Federal Government. Present monetary regulations provide for the withdrawal of National Bank and Federal Reserve Bank notes, both of which were based on the deposit of government bonds with the Treasury. This leaves Federal Reserve notes (to be considered later) as the only important form of monetary notes, although the Federal Government may issue additional non-interest-bearing obligations in the future. At present the government obligations of this type are negligible in amount, consisting of the United States notes or greenbacks issued during the Civil War, and the Treasury notes of 1890. Since Federal Reserve notes as well as those of the government have been made legal tender, and neither can be redeemed in standard metal, they are

virtually fiat money despite the statement of a promise on their face.

(c) *Fiat Money.* Any instrument whose circulation and acceptance is based on the order or fiat of the government may be designated as a fiat money. Notes, as just indicated, may become fiat instruments in effect when they are not redeemable in standard metal. But instead of issuing instruments which on their face appear to be promises, the government might issue instruments which were outright orders. Since no form of official credit-money can now be redeemed in standard money, all paper dollars, whether they appear to be certificates or notes, might merely read: "This is One Dollar by Order of the United States of America."

(d) *Checks.* Unlike fiat money, checks are not legal tender, although they are a type of order. On the basis of a demand claim arising out of the deposit of cash, checks, proceeds of discounted notes, etc., a depositor may draw checks or orders against his account. By writing and signing an order, or by filling out a printed form, the depositor directs the payment of a designated amount of money by the bank to a designated party known as payee, or to the order of the payee. As long as the check is not drawn for a larger amount than the balance in the depositor's account, the bank is obliged to honor the check, provided the depositor has not stopped payment of it prior to its presentation at the bank on which it is drawn. Banks may also draw checks on themselves, known as cashier's checks, or they may have accounts in other banks against which they draw drafts; such instruments are used widely in international trade.

*The Creating Process.* As between commercial banks, Federal Reserve Banks, and the Federal Government, the process by which credit-money is created is sufficiently different to warrant separate consideration even though there are points of similarity.

(a) *Commercial Bank Credit.* The credit-money which commercial banks create takes the form of deposits which circulate by means of checks. Whenever banks accept deposits

of cash or of checks or other instruments, such as security coupons for collection, the bank creates a deposit credit or a claim which the depositors have against the bank. But these deposits do not necessarily constitute credit-money. The deposit may be on time, in which case it does not usually circulate as check currency. Such deposits must be either converted into cash or transferred to a demand basis before they constitute credit-money.

Banks are, however, capable of creating deposits by making loans, and most of these deposits serve as credit-money. The extent to which banks create credit in this way is indicated in Figure 11, which shows that for most of the period since 1914 the loans of all active banks have been equal to more than half, and at times considerably more than half, of the deposits. Not all loans result in the creation of credit-money, as when customers want cash or when, in rather rare instances, the amount of the loan is deposited on time. But ordinarily commercial borrowers want neither cash nor time deposits but demand deposits against which they can draw their checks. In these instances the bank accepts the obligations of its customers, and makes its own credit available to them in a form which they can use as check currency.

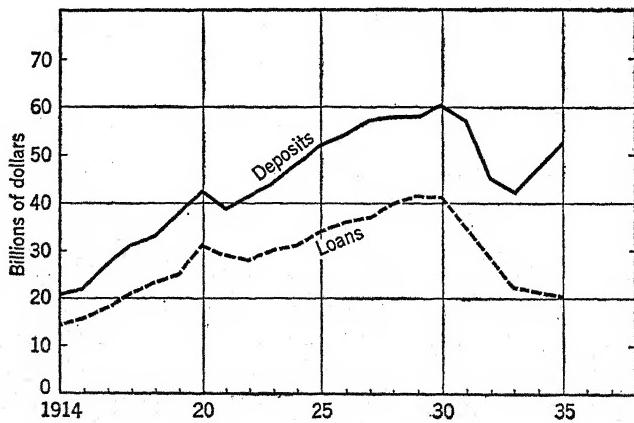


FIGURE 11. BANK DEPOSITS AND LOANS (ALL ACTIVE BANKS)  
From *Report of the Comptroller of the Currency*.

The extent to which commercial banks can create deposits by making loans depends in part on the cash and other reserves which can be employed to redeem its credit obligations in money as occasion arises. In addition to such cash reserves as the experience of each bank dictates it must have on hand to meet current requirements, there are certain reserves required by law. These are known as legal reserves and are not the same for all banks. State laws govern those banks which are not members of the Federal Reserve System. For those which are members, the requirements depend on the kind of deposits and the location of the bank. Reserves are lower on time than on demand deposits. All member banks must have at least 3 per cent reserve against time deposits. Banks in New York and Chicago, the leading financial centers of the country, are designated as Central Reserve City Banks and must have at least 13 per cent reserve for demand deposits. In some sixty other cities, including Philadelphia, Boston, and San Francisco, the banks are designated as Reserve City Banks, for which the reserve is 10 per cent, while banks in all other places are known as country banks, for which the reserve is 7 per cent. These are minimum reserves, and may be increased at the direction of the Federal Reserve Board of governors.<sup>1</sup> All legal reserves must be kept at the Federal Reserve Bank of the district. Any reserves which banks may have in their own vaults or on deposit with other banks are not a part of the bank's legal reserves. But banks may also increase their own lending power by liquidating some of their assets. They may sell bonds or other securities in which they have invested, or they may sell some of the notes they have discounted for their customers in the commercial paper market at slightly less than the face value of the obligations. Members of the Federal Reserve System may also borrow from the Federal Reserve Bank of their district by rediscounting eligible obligations of customers. Just as a business concern may take a note received from a customer and convert it into cash by

<sup>1</sup> In the middle of 1936 the minimum requirements were increased 50 per cent and a further increase of 33½ per cent was announced early in 1937, thus raising the minimum reserves 100 per cent. Half the latter increase is scheduled for March 1 and half for May 1.

discounting it at a bank, so member banks may take notes of their customers and again discount (rediscount) them at the Federal Reserve Bank. While member banks may liquidate any of their assets with maturities not exceeding four months, the Reserve Banks give preference to commercial paper or short-term notes of business enterprises arising in the course of production and trade.

Although the credit which commercial banks create is intended to be employed mainly in making short-term loans and discounts, it may be used for investment in securities, in which case it assists in the long-term financing of government and private enterprises. Ordinarily the investments of all active banks have been slightly less than half their loans and discounts, as is indicated by Figure 12, which shows the major assets of the banks. Not until 1933 was there an appreciable proportionate increase in investments; then they about equaled the loans and discounts.

(b) *Federal Reserve Bank Credit.* Whereas commercial institutions create credit in the form of deposits, the Reserve

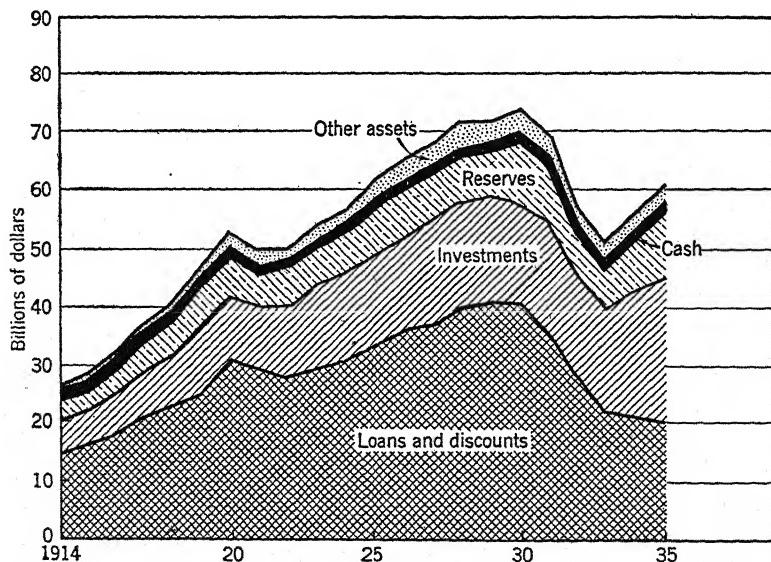


FIGURE 12. USES OF BANK FUNDS (ALL ACTIVE BANKS)

From *Report of the Comptroller of the Currency*.

Banks may create either deposit or note credit. In providing credit these banks do not deal directly with the general public, but with other financial institutions, particularly the commercial banks which are members of the Federal Reserve System. It is for this reason that the Reserve Banks are sometimes designated as bankers' banks.

Deposit credit of Reserve Banks is created in much the same way as that of commercial institutions, even though the deposits come mainly from member banks whose legal reserves must be deposited with the Reserve Banks. The members may deposit cash, or they may accept deposit credit for the balances due them in the clearing of checks and other instruments. The latter is made possible by the clearing-house facilities which the Reserve Banks furnish for their members. Then too the members may build up their legal reserve by borrowing from the Reserve Banks. In this case the Reserve Banks rediscount the short-term obligations of their members and give them in exchange deposit credit which serves as legal reserve. At times the Reserve Banks are called upon to lend extensively, and at other times the members may have such excess reserves over legal requirements that there is no occasion to call upon the Reserve Banks for assistance.

Note credit may also be created by the Reserve Banks. It will be recalled that at one time National Banks could also issue notes based on government bonds and that on the same basis the Reserve Banks issued Federal Reserve Bank notes. When the government recalled for redemption the particular bonds on which these notes could be issued, the basis for them was removed and no other provision was made for issuing them. This left the Federal Reserve notes as the principal form of paper money. If a commercial bank has need for additional paper money to meet the requirements of its customers it may obtain Federal Reserve notes either by drawing upon its excess reserve or by borrowing. As their needs dictate, the members can use the rediscounting facilities of the Reserve Banks with equal ease for obtaining either deposit credit or notes.

While the Reserve Banks may create either deposit or note

credit, these cannot be created without limits, and the requirements which must be met are different in the two cases. The limits are determined mainly by the amount of cash these banks have in gold certificates. For deposit credit a reserve of 35 per cent and for note credit a reserve of at least 40 per cent in these certificates is required. In the case of notes the difference between their face value and the gold certificate reserve must be represented by short-term obligations which the bank has acquired. If a bank had sufficient gold certificates for a larger reserve, say 60 per cent, then only 40 per cent in short-term obligations would be needed as a basis for its note issue. At any time, therefore, the combined deposit and note obligations of the Reserve Banks require gold certificate backing of between 35 and 40 per cent. For a number of years the actual reserves held against the combined obligations have been around 80 per cent, or about twice the amount required. In times of emergency the legal minimum may be reduced by authority of the Federal Reserve Board of Governors, but this concession subjects the Reserve Banks to a government tax which is not imposed so long as the established reserves are maintained.

The credit created by Federal Reserve Banks may be used not only to assist member banks in liquidating or rediscounting their short-term obligations, but also to meet such general requirement for funds as the Federal Reserve authorities see fit. In the early days of the Federal Reserve System the Reserve Banks used their credit mainly in lending to member banks, as is indicated in Figure 13. Such loans are often referred to as "bills discounted." Similar bills of exchange were likewise bought in the open market. In addition to these short-term obligations, the banks also furnished funds for the security market by investing in securities, mainly those of the United States Government. Until the depression of 1929, their credit had never been predominantly for security investment. During that depression the picture changed so radically that there was not only increasing use of their credit in this direction, but virtually all the credit they created was employed in purchasing government obligations. Thus their credit was being used to

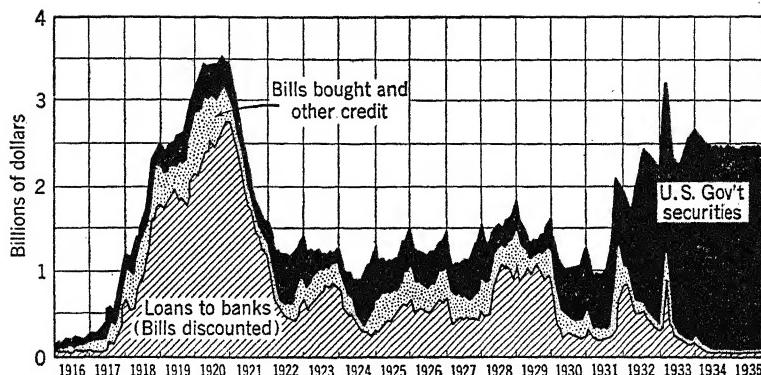


FIGURE 13. USES OF FEDERAL RESERVE BANK CREDIT

From *Annual Report*, Federal Reserve Board.

finance government activities rather than the activities of private business. This shift did not curtail the availability of Reserve Bank credit for the usual commercial purposes. Member banks could rediscount their obligations at any time, but their excess reserves were so large as to be fully adequate for the loans they were willing to make to customers.

(c) *Government Credit.* Federal credit can be created by authority of Congress at any time in any amount, and may be represented by instruments which do or do not constitute money. Through the Treasury Department, official credit-money is issued in such forms as certificates, notes, or mere fiat. Non-interest-bearing notes without any date of maturity have not been issued for some years, although silver certificates are still being issued on the basis of silver purchased by the government. Despite their designation as certificates or notes, these instruments are, for most practical purposes, fiat money. Through the post office the government also creates deposit credit, some of which serves as money. Postal savings correspond to the deposit credit of savings banks or to the time deposits of commercial banks, and do not give rise to any medium of exchange which serves as money. The deposit credit represented by postal money orders, however, constitutes a type of credit-money. Indirectly deposit credit is created through a

variety of agencies, such as the Reconstruction Finance Corporation, the Intermediate Credit Banks, the Home Owners' Loan Corporation, and the Federal Savings and Loan Insurance Corporation. No attempt will be made to unravel the maze of financial threads through which these institutions operate in the creation of deposits.

#### C. CONTROL OF CREDIT-MONEY

One of the conspicuous weaknesses of the banking arrangement in this country is the absence of coordination in the creation of credit-money which is the principal form of money. No less than fifty-one agencies are engaged in supervising the banks of the country. The solvency and practices of state banks are under the direct jurisdiction of the various states, and among these forty-eight state agencies the supervision of slightly over 10,000 banks is distributed. The National banks, of which there are some 5500, are under the general supervision of the Federal Government, with the Comptroller of the Currency as the immediate supervising agency. Also there is the Federal Reserve System, with its direct regulatory control of credit created by all the National Banks, which must be members of the system, and by something less than one thousand state banks which are voluntary members. Indirectly the system is able to exercise also some control over the credit policies of non-members.

Even though only about 40 per cent of the banks of the country are members of the Federal Reserve System, its influence is somewhat greater than the number of members would indicate. The members account for, roughly, two thirds of the banking facilities and resources of the country. If savings banks and unincorporated private banks are excluded, the proportion is increased to over 80 per cent. In short, the major portion of the commercial banking is within the jurisdiction of the Reserve System. The remainder, however, is sufficiently large to curb the effectiveness of the system in its regulation of credit. Since the most centralized control of bank credit comes by way of the system, it will be helpful to notice briefly its organization and mechanism.

*Mechanism of Control.* Through the Reserve System there are four ways in which control may be exercised over the expansion and contraction of credit-money. They are moral suasion, control of the reserve requirements of member banks, control of the district banks' rediscount rate, and open market transactions.

(a) *Moral Suasion.* The least influential means of control is moral suasion. As far as many of the small banks are concerned, they are likely to accept the advice and suggestions of the district bank. But the larger banks conduct their affairs without much assistance in this direction. Moreover, the district banks are not in a sufficiently strong position to insist on their advice and suggestions being followed. Member banks are in competition with non-member banks. Consequently moral suasion must be tempered with a recognition of this competition.

(b) *Reserve Requirements.* The Reserve System provides, as has been seen, two sets of reserve requirements. The one applies to the member banks and the other to the Reserve Banks. It will be recalled that all member banks must have reserve at the district bank equal to 3 per cent of their time deposits, and equal to 13, 10, and 7 per cent of their demand deposits, depending on whether they are Central Reserve City, Reserve City, or country banks. These amounts cannot be lowered except by legislation, but may be increased. The Board of Governors has authority to double the requirements in the event it deems the customary requirements inadequate to prevent undue expansion of credit. This provision was first employed in July, 1936, when all reserve requirements of member banks were raised by 50 per cent.<sup>1</sup> The Reserve Banks themselves must have their reserves in gold certificates equal ordinarily to at least 40 per cent of their note credit and 35 per cent of their deposit credit, although these requirements may be lowered in emergencies.

(c) *Rediscount Rate.* While the Reserve Banks constitute pools of available credit which may be borrowed by member

<sup>1</sup> Early in 1937 a further increase is expected.

banks, an interest rate is charged for this service just as the member banks charge interest for loans to their customers. The amount of the charge, known as the rediscount rate, is not necessarily the same in all districts. Through lowering or raising of the rate a moderate amount of control may be exercised on the expansion or contraction of credit. There is considerable difference of opinion as to how effective the rate is as a controlling device, but at least it is less effective when members have large excess reserves than when they need to borrow for the purpose of building up their legal reserves. Each Reserve Bank determines its rate periodically, although the Federal Reserve Board of Governors may order the rate to be increased or decreased if that body believes the rate established by the bank itself is too low or too high.

(d) *Open Market Transactions.* It has been noted previously that Reserve Banks may use their funds for the purchase of commercial paper and securities in the open market. This buying and selling is known as open market transactions, and they play a highly important part in the control of credit. In fact it is the most powerful weapon available. Through it both member and non-member banks can be curbed or stimulated in expanding their credit.

While the mechanism of this operation is complex, the underlying principle of it is fairly simple. By the purchase of commercial paper and securities the Reserve Banks can force funds into the market or siphon them out of it. If, for example, it is decided that more credit is needed, the Reserve Banks may aid in this direction by purchasing securities. In payment for these the banks use their own credit. They may use their notes, but they are more likely to use checks against their own funds. Suppose a Reserve Bank purchased \$500,000 worth of government securities through brokerage houses. The bank would probably give its own checks to the brokers in exchange for the securities. The checks would then be deposited by the brokerage houses in their own commercial banks. These banks in turn would send the checks to the Federal Reserve Bank for payment. If the commercial banks needed currency

for circulation they would request payment in the form of Federal Reserve notes. Otherwise they would receive a credit at the Reserve Bank. In either case the amount of their available credit would be expanded.

If excessive credit were available and a curtailment of it seemed necessary the above operation would be reversed. Instead of buying securities the Reserve Banks would sell them. Under these circumstances the brokers through whom the sales were made would give the Reserve Bank checks drawn against their accounts in commercial banks. Payment of the checks drawn on these banks might be made by returning Federal Reserve notes, or by having their deposit credit reduced at the Reserve Banks.

*Administration of Control.* The Reserve System is deliberately organized to provide a combination of centralized and decentralized control. The centralized control is furnished by the Board of Governors and the Open Market Committee, while the decentralized control is with the Boards of Directors of the district banks.

(a) *Boards of Directors.* The Federal Reserve Banks are the units of the organization and one unit is located in each of the twelve Reserve Districts. All member banks are required to subscribe to shares of stock in the bank of their district on the basis of 6 per cent of the subscribing bank's paid-up capital and surplus, except mutual savings banks, whose subscription must be six tenths of 1 per cent of the total deposit liabilities as determined semi-annually. While the Reserve Banks are privately owned, their management is not entirely private. Most of the directors of each bank are elected by the member banks of the district; the balance are appointed by the Federal Reserve Board of Governors. One of the appointed members is designated as the Federal Reserve Agent. He is the official representative of the government at the bank and serves as the chairman of the Board of Directors. The active head of the bank is its president who is elected by the directors subject to the approval of the Board of Governors.

(b) *Board of Governors.* The Board of Governors is the cen-

tralizing agency of control for the entire system. It consists of seven members appointed by the President of the United States. In order to avoid political domination by either party, the terms of office are arranged so that two will expire during each presidential term of office. Most of the policies for the entire system are controlled by this board.

(c) *The Open Market Committee.* The sole agency in directing the buying and selling of bills and securities in the open market is this committee. It consists of the Board of Governors and five additional members chosen from different parts of the country. For the purpose of selecting these members the Reserve Banks are combined into five groups and each group selects one member for the committee. This committee of twelve members is the most influential single regulating agency of credit-money in the country.

#### QUESTIONS

1. What is meant by credit?
2. In so far as confidence plays a part in credit transactions, what is the nature of the confidence?
3. What circumstances make impossible a complete estimate of the size of the credit structure?
4. How does credit differ from credit instruments?
5. "Along with other instruments, certificates of stock may be considered as a type of credit instrument." Do you agree? Give reasons.
6. Distinguish between:
  - Clearing house and brokerage house.
  - Investment house and investment trust.
  - Commercial bank and investment bank.
7. What circumstances make necessary special credit provision for agricultural needs?
8. Compare the various credit institutions as to whether they function mainly in "manufacturing" or in "marketing" credit.
9. Explain the requirements for credit-money.
10. "The acceptability of credit-money rests on a quite different foundation than does standard money." What is meant by this statement?
11. "The United States has a highly coordinated banking system." Do you agree? Give reasons.
12. What are the leading kinds of credit-money? Explain each.

13. "The so-called silver certificates now in circulation are not actually certificates." Is this statement valid? Give reasons.
14. Explain the process by which commercial banks create credit-money.
15. Does the creation of credit by Federal Reserve Banks differ in any respect from that of commercial banks?
16. How, if at all, does the creation of credit-money by the Federal Government differ from that of either commercial banks or Federal Reserve Banks?
17. Compare the forms taken by the credit-money for which commercial banks, Federal Reserve Banks, and the Federal Government are responsible.
18. What provision is made for the control of credit-money in this country?
19. Explain the mechanism by which the Federal Reserve System operates in controlling credit.
20. "The creating of credit-money should be entirely in the hands of the government with private banks merely marketing credit." What is meant by this statement? Do you agree? Give reasons.

## CHAPTER VII

### UNSTABLE PRICE LEVELS

IN LESS than two centuries this country has experienced four violent price upheavals. Each has occurred in connection with war, as shown by Figure 14. First came the Revolution, next the War of 1812, and then at intervals of roughly fifty years came the Civil War and the World War. In each instance prices went skyrocketing, only to crash following the conclusion of hostilities. Between these major price disturbances the path is distinctly irregular, some of the fluctuations being greater than others, but all notably less violent than those resulting from war. Although the fluctuations show up-and-down tendencies extending over a period of years, considering the whole span of nearly two centuries no one tendency seems to have persisted. During the World War prices rose as high as during the Revolution, and in 1900 they were about as low as before the Revolution. In this chapter emphasis will be placed on the fluctuations which tend in some one direction for a more or less extended period of time.

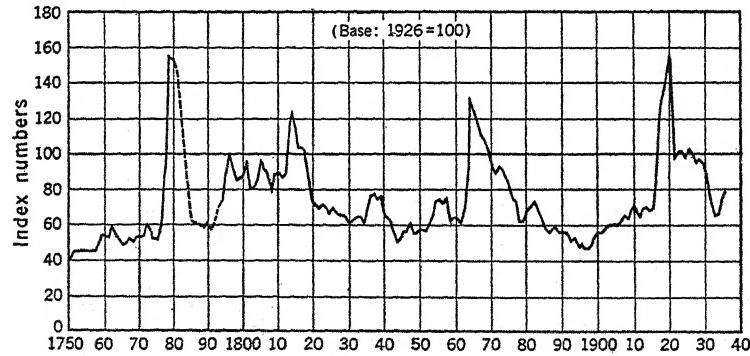


FIGURE 14. PRICE UPHEAVALS IN THE UNITED STATES

Data 1750-1932, from *Prices*, by Warren and Pearson, published by John Wiley & Sons, Inc., and used with permission; data from 1933-35 from United States Bureau of Labor Statistics.

## I. MEANING AND TYPES OF PRICE LEVEL

### A. MEANING OF PRICE LEVEL

The term price level is used here to mean an average of prices at a given time. It may be an average of prices for the same or for different kinds of goods. These may be sold at the same place or at different places. The period of time for which the average is computed may be long or short, depending upon the purpose for which it is used. The daily average of security prices, for instance, is an average price at which a variety of securities exchanged hands on a given day in different markets. For some purposes it may be desirable to have weekly, monthly, or yearly averages of security prices, in which case an average may be computed from the daily averages. In this case the average is actually an average of average prices. The averages for most prices are computed by the sampling process, similar in nature to that previously noted in the measurement of production. By careful and adequate selection of samples an average can be computed which will be representative of the group of prices from which the samples were drawn.

These averages are serviceable in making comparisons. Usually an average of prices has little or no meaning in itself, but it becomes significant when it is compared with similarly computed averages at other periods of time. An average in terms of dollars, however, is not the most serviceable means by which comparisons can be made. The important information is the degree to which prices have changed between periods. Just as index numbers were found a convenient means of comparing changes in the volume of production, so index numbers are used in comparing price level changes. The amount of money required to buy a certain quantity of goods at a given time is expressed by the figure 100, and the amount of money required for corresponding goods at other periods is expressed as a percentage of this base amount. When it is said that a price index in 1935 is 80 as compared with 100 in 1926, this means that the price level or the average

of prices is 20 per cent lower in the later than in the earlier year.

#### B. TYPES OF PRICE LEVEL

While each kind of goods has some peculiar characteristics or tendencies of its own, there are purposes for which the common rather than the diverse characteristics of goods are important. By the combination of goods on the basis of certain common characteristics, the resulting average is capable of showing broader tendencies than any of the individual averages will disclose.

*Commodity Level.* Considerably more attention has been given to the prices of commodities than to those of services. This is partly accounted for by the circumstance that more price information is available for commodities than for services. The prices of many services are more complicated, since they represent not only the price of services used in creating the physical product but that of other services as well, such as those of transportation.

(a) *Wholesale Level.* For many business purposes the most significant prices are those of commodities which are sold in wholesale quantities. Since this wholesale price is the basis on which most enterprises buy goods and on which many of them also sell, naturally they are directly interested in how the prices they are paying or getting compare with the average. The United States Bureau of Labor Statistics regularly computes indexes of this type. The groups of commodities included are farm products, textiles, fuel and lighting, metals and metal products, building materials, chemicals and drugs, house furnishings, and some miscellaneous items. In addition to separate indexes for these groups, the 784 commodities represented therein are combined into an all commodity wholesale price index which runs back to the year 1890. Another broad index of similar prices, running back to 1791, is computed from a smaller number of commodities by the Federal Reserve Bank of New York.

(b) *Retail Level.* Not only business concerns but also

consumers have need for information as to the course of retail prices. Retail prices have a tendency to lag behind wholesale prices in both their up and down swings. The Bureau of Labor Statistics likewise publishes price indexes for food, coal, gas, and electricity, of which the index for retail food prices is most closely followed. This index is particularly significant because food constitutes a considerable part of the goods purchased by ultimate consumers.

(c) *Durable Goods Level.* Another point of view from which information as to commodity prices is important is the durability of goods. Whether sold at wholesale or at retail, durable goods as a group are likely to have different price tendencies from those of such goods as coal or food which cannot be used over and over again as can machinery and furniture. In periods of poor business and of diminished incomes the purchase of many durable goods can be postponed by more extensive repairs than would otherwise be made. As a result the price level for such goods may follow a different course than the level for more perishable products.

*Cost of Living.* The particular prices in which consumers are most interested are those constituting the cost of living. Not only do ultimate consumers spend money for commodities but for a variety of services. When consumers rent houses they spend money for the use of property. In obtaining medical attention they spend money for the services of physicians and hospitals. When they go to the theater or ride in public conveyances they are again using money to obtain services. Consequently any attempt to show adequately the general changes in the cost of living must take into account the services as well as the commodities for which consumers spend money. In addition to the estimates by the Bureau of Labor Statistics, studies of living costs are made from time to time by the National Industrial Conference Board.

*General Level.* Important as these different types of combined prices may be for certain purposes, none of them is intended to show changes in the general level of all prices. For this purpose the sampling must cover widely different

kinds of goods. Both commodities and services must be covered, and prices paid by ultimate consumers as well as by business enterprises must be represented. While it is generally agreed that widely diverse sampling is necessary to show changes in the general price level, there are differences of opinion as to whether or not the prices of securities should be included. Doctor Carl Snyder argues strongly that these prices should be included, and on this basis has computed the first index definitely designed to show changes in the general level of prices. The index embraces items in the following groups: wholesale prices for industrial products, farm prices at the farm, retail food prices, rent, retail prices of clothing, fuel, house furnishings, etc., freight transportation costs, wages, realty values (urban and farm), prices of securities (bonds and stocks), equipment, machinery, hardware, and automobiles.

Since the Bureau of Labor Statistics wholesale commodity price index, which is not designed to show the general level of prices, is often misinterpreted as an index of general prices, it is interesting to compare this index with Snyder's index which is designed for this purpose, in order to discover whether the two do correspond. The two indexes have a tendency to move in harmony; that is, when one increases the other tends to rise, and when one declines the other tends to fall. The level of wholesale and of general prices, however, is different,

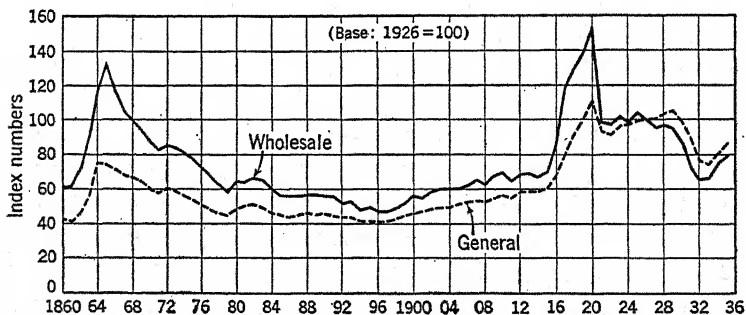


FIGURE 15. GENERAL AND WHOLE COMMODITY PRICES

General Price Index of the Federal Reserve Bank of New York, with base shifted from 1913 to 1926, and Wholesale Commodity Price Index of the United States Bureau of Labor Statistics.

as is indicated by the gap between the two lines shown in Figure 15. While the gap is greatest in times of war, it continues in times of peace. Not only do the indexes tend to different levels, but the levels themselves have exchanged places. Until 1926 wholesale prices were consistently above the level of general prices. Since then the opposite holds with the general level higher than the wholesale commodity level.

## II. CAUSES OF GENERAL PRICE LEVEL CHANGES

Instability of prices in general is not peculiar to the United States. As yet no index of general prices is available for the world. The most widely used index is related to wholesale prices and is not entirely satisfactory. If, however, this index is compared with that of the Bureau of Labor there is a striking similarity for nearly a century, as shown by Figure 16. Only during the Civil War, which was a domestic conflict, did prices in this country become conspicuously out of line with world prices. Such similarity is not surprising, in view of the prominence of the United States in world trade during most of the period, and in view of the way in which the price levels of countries are linked together through their monetary standards. At the same time the similarity suggests that in addition to whatever local circumstances may contribute to

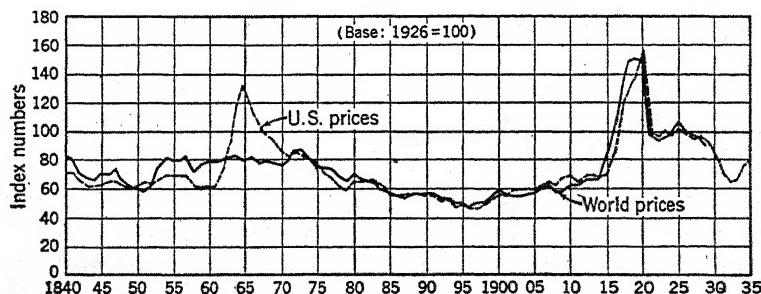


FIGURE 16. UNITED STATES AND WORLD PRICE LEVELS

Sauerbeck-Statist Index of World Prices and United States Bureau of Labor Statistics Index of Wholesale Commodity Prices.

unstable prices there are basic forces at work throughout the world. Consequently stabilization of domestic prices cannot be accomplished without cooperation of other nations unless commercial contact with the outside world is virtually abandoned or foreign trade is deliberately controlled by the government.

#### A. INFLUENCING FACTORS

*Money.* One of the factors which may influence the general level of prices is money. Changes in either the quantity or the velocity of money are capable of bringing about changes in the price level under certain circumstances.

(a) *Quantity of Money.* Provided other factors remain unchanged, the price level tends to vary directly with the quantity of money available for buying. If when a given amount of goods for exchange is available there is also a larger amount of money for buying, there will be a tendency for prices in general to rise. Money has become more abundant relative to the goods for which it exchanges, and competing buyers will offer more money for the goods to be sold. If, on the other hand, the quantity of money available is smaller in relation to a given amount of goods, prices will have a tendency to fall, since in this case money is scarcer compared with the goods for which it exchanges. With buyers having less money to offer for the goods, sellers find they must accept lower prices in order to dispose of their goods.

This relation between money, trade, and prices is sometimes expressed by the formula  $\frac{M}{T} = P$ , with  $M$  representing money,  $T$  representing trade, and  $P$  representing prices. Since any figures may be used for purposes of illustration, suppose that at a given time there were \$60,000 and 30,000 units of goods to be exchanged for the money. All the goods would not sell at the same price and there might be different prices for the same goods, but the average transaction would be \$2. Expressed by the formula this would be  $\frac{\$60,000}{30,000} = \$2$ .

If, however, the amount of money were only \$45,000 the average price for the same amount of goods would be \$1.50. Consequently when other forces remain unchanged the average of prices or the general price level will be proportionately higher with a larger amount of money than with a smaller amount.

When gold and silver were used extensively in the course of trade, money usually meant these standard metals. Later these came to be used as reserves for the issuing of official credit-money, and still later unofficial credit-money in the form of bank-credit circulated by means of checks. Consequently in considering the amount of money capable of influencing the price level it is well to distinguish standard money, official credit-money, and unofficial credit-money. If these are represented respectively by the letters  $M$ ,  $M'$ , and  $M''$ , the previous formula  $\frac{M}{T} = P$  is expanded into  $\frac{M + M' + M''}{T} = P$ .

This does not change the underlying idea. It merely distinguishes the kinds of money which may not only influence prices but may also be exerting different influences at the same time. For example, with no change in the amount of standard money there might be an increase in official credit-money and a decline in unofficial credit-money. In so far as all three types of money are used simultaneously their aggregate amount must be considered. Hence the plus signs between the letters.

(b) *Velocity of Money.* The amount of trade or exchange which can be conducted with a given quantity of monetary units depends in part on the velocity with which the units work. The circus stunt of the three clowns, Red, White, and Blue, settling their debts with each other illustrates this point. First, each clown having \$5 and owing that amount to one of the others, decides to pay his debt. Simultaneously Red gives his \$5 to Blue, Blue gives his to White, and White gives his to Red. Here a total debt of \$15 is paid with three \$5 bills each circulating once. Soon they are again in debt in the same way for the same amount, but Red alone has \$5. He

passes it to White, who in turn passes it to Blue, who then passes it back to Red. Once more the debts are paid and each clown has neither more nor less money than before, but this time the entire debt of \$15 has been paid with one \$5 bill circulating three times.

There are also differences in the rate of turnover of the different kinds of money. At the one extreme is gold. Since

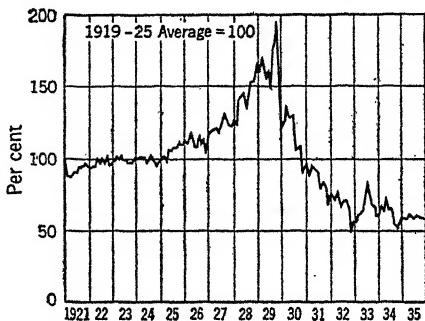


FIGURE 17. RATE OF TURNOVER OF DEMAND DEPOSITS IN PRINCIPAL CITIES  
Data from Federal Reserve Bank of New York.

it has been nationalized it does not circulate, and even when its slight use in foreign trade is considered its velocity is virtually zero. The burden of active service is carried by credit-money, both official and unofficial. It is impossible to determine how rapidly coins and paper bills change hands, hence the velocity of official credit-money cannot be ascertained. This, however, is not the case with unofficial credit-money. Here the rate of turnover can be estimated by comparing the demand deposits which are subject to check with the bank clearings or the amount of deposit credit drawn upon by the use of checks. For the principal cities during a fifteen-year period the changes in rate of turnover are shown by Figure 17. It will be noticed that at the end of 1935 these deposits were working only about one quarter as fast as at the height of activity in 1929, and only about half as fast as they worked for several years at the beginning of the period.

Velocity of money influences the general level of prices in

the same way that the number of money units does. If at any time the media of exchange circulates more rapidly in relation to the same volume of trade, the general level of prices rises. But if instead of velocity increasing it declines, the price level falls. Consequently it may be said that the price level tends to vary directly with the velocity of the circulating media provided other factors remain the same.

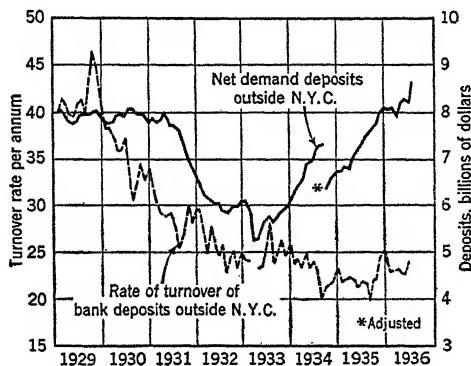


FIGURE 18. BANK DEPOSITS AND THEIR VELOCITY

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While velocity may influence the price level in the same way as the quantity of circulating media, these two forces may or may not be moving in the same direction. This is illustrated by bank deposits as shown in Figure 18. During 1930 the deposits remained about the same, but velocity declined sharply; then for several years both declined, after which deposits increased sharply for several years with velocity continuing its decline. Thus the influence of one factor may offset the influence of the other or they may work together either to increase or decrease the means with which goods are paid for. The velocity of the circulating media, however, is incapable of the same deliberate control that may be exercised on the number of monetary units. Through action of the Federal Reserve authorities alone the quantity of official and unofficial credit-money can be expanded or contracted as occasion requires, but a central authority cannot in a similar fashion control the speed

with which the media work. This factor depends on circumstances which are not readily controlled, such as habits, customs, and business conditions. For example, the monthly payment of interest and dividends would contribute to greater velocity than the customary semi-annual or quarterly payments.

Since the price level is related not only to the number of monetary units but also to the speed with which they work, the previously used formula may be expanded to include velocity. If this factor is represented by  $V$  the formula becomes

$$\frac{MV + M'V' + M''V''}{T} = P.$$

This means that the amount of

money in its broadest sense equals the quantity of standard money times its velocity, plus the quantity of official credit-money times its velocity, plus the quantity of unofficial credit-money times its velocity. If the aggregate of these multiplications and additions is larger at one time than at another relative to a given amount of trade, the price level will tend to be higher than if the aggregate were smaller.

*Trade.* The price level may be influenced not only by monetary factors but also by the volume of trade. Here, however, the relationship is different, for the price level tends to vary inversely with the volume of trade when other forces remain unchanged. With a given amount of available money, whether it be standard or credit, an increase in the quantity of goods for exchange will cause the general price level to decline. The reason for this is that the same amount of money must be spread more thinly over a larger quantity of goods in order that all the goods may be exchanged for the money. Suppose a fund of \$60,000 was circulating twenty times over a period so that there was the equivalent of \$1,200,000 to be exchanged for 240,000 units of goods. The average price per unit would be \$5.00, but if there were 300,000 units the average price would decline to \$4.00. On the other hand, if instead of 240,000 units of goods there had been only 200,000 units in relation to \$1,200,000, the average price would increase from \$5.00 to \$6.00. Here the general price level rises when the

volume of goods decreases with no change in the amount of money.

In short, it may be said that the general price level tends to vary directly with the quantity and velocity of money,<sup>1</sup> and to vary inversely with the volume of trade, provided in each case the others remain equal. This qualification that other things remain equal may seem to invalidate the generalizations, since money and trade are in reality likely to be changing at the same time. The analysis, however, is intended merely to show the direction in which these forces operate on the general price level. It is possible that money and trade may be changing at the same time, but in such a manner that the influence of each is just offset by that of the other so far as the price level is concerned. If money and trade were increasing at the same rate the tendency would be for the price level to remain unchanged, as would also be the case if money and trade were decreasing at the same rate. On the other hand, one might change faster than the other and the price level would move in the direction dictated by the more powerful force. If money were increasing faster than trade the influence of money would more than offset the influence of trade and the price level would tend to rise. In doing so it would be moving in the same direction as though money were increasing with no change in trade. If, however, trade were increasing more rapidly than money, trade would exercise the dominating influence and the price level would tend to fall. It would here be moving in the same direction as though trade were increasing with no change in money.

#### B. PROBABLE CAUSES OF CHANGES IN PRICE LEVEL

With agreement that the general price level will vary directly with changes in the quantity of money<sup>1</sup> and the velocity thereof and will vary inversely with the volume of trade if other things are equal, there is not agreement as to what causes the price level to change. If the velocity of money and the volume of trade are eliminated (for reasons to be explained

<sup>1</sup> Including credit-money.

later) the issue becomes whether changes in the amount of money cause the price level to change or whether changes in the price level itself cause the amount of money to change. It is argued that the price level is capable of generating forces which react upon itself. The issue, similar to that of whether the hen or the egg came first, can be met in part by distinguishing between price level changes which occur in the short run and those tendencies which extend over longer periods of time. During cyclical swings in business there are indications that the price level itself generates forces which react upon it, but there are no such indications for longer periods of time. It is these longer-run price movements which will be considered here, the cyclical swings being considered in the following chapter.

Concerning the long-run movement of the price level there is still another controversy. Agreement is fairly general that changes in the amount of money cause changes in the general level of prices, but there is difference of opinion as to what kind of money is the dominating factor. It is argued by some that gold is mainly responsible, while others contend that credit-money, particularly bank credit, is the dynamic force.

*Gold.* The influence of gold on the price level is attributed to its wide acceptability for monetary purposes. Even before the United States and many other countries abandoned silver as a standard metal, England had done so and had adopted a gold standard. As the leading trading nation of the world, her adoption of this standard gave added importance to gold even when other nations did not use it exclusively. Changes in its quantity are believed by some to be chiefly responsible for changes in the general level of prices. This does not mean that prices fluctuate with the actual production of gold. Its annual output has been erratic, and has corresponded even less closely than silver with the world production of basic commodities. Much of the metal is used for industrial purposes, and in China and Egypt considerable quantities are hoarded. The yearly addition to the world stock of gold money has tended to increase at an average rate of about 3 or 4 per cent a year.

Whether the gold stock is expanding rapidly or slowly at

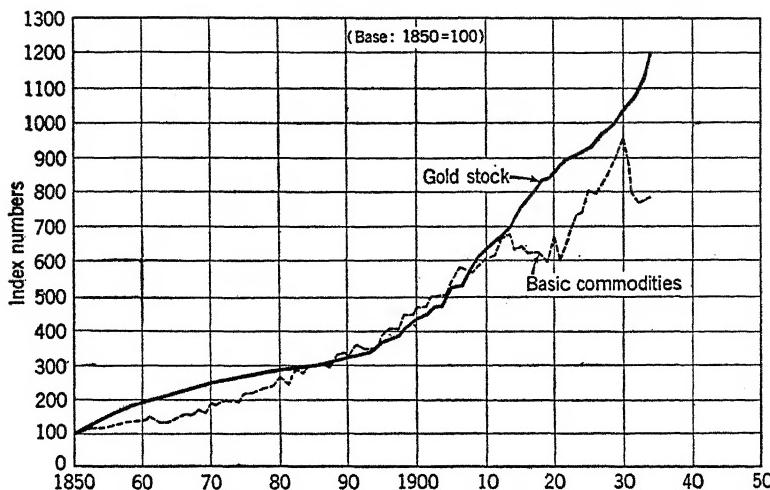


FIGURE 19. WORLD GOLD STOCK AND PRODUCTION OF BASIC COMMODITIES

Estimate of gold stock from *Gold and Prices*, by Warren and Pearson, published by John Wiley & Sons, Inc., and used with permission. Estimate of basic commodity production by Federal Reserve Bank of New York.

any time is not in itself significant. Those who contend that changes in the quantity of monetary gold are responsible for changes in the price level do not mean that if the stock of monetary gold were increased by, say 10 per cent, there would be approximately a 10 per cent increase in general prices. The influence of the gold depends on the production of goods for which the gold is used in the process of exchange. How closely the world's monetary stock has corresponded with the world's production of basic commodities is shown by Figure 19. Only in the period 1880 to 1910 was the similarity strikingly close. Prior to that period there was a divergence, and a more decided gap developed thereafter. To bring about an increase in the price level, the monetary stock must increase faster than the production of goods. With the stock increasing at the same rate as the production of goods, there would be a tendency to a stable price level, whereas a falling price level would result from the output of goods increasing more rapidly than the stock of monetary gold.

Historical indications that gold has influenced the price

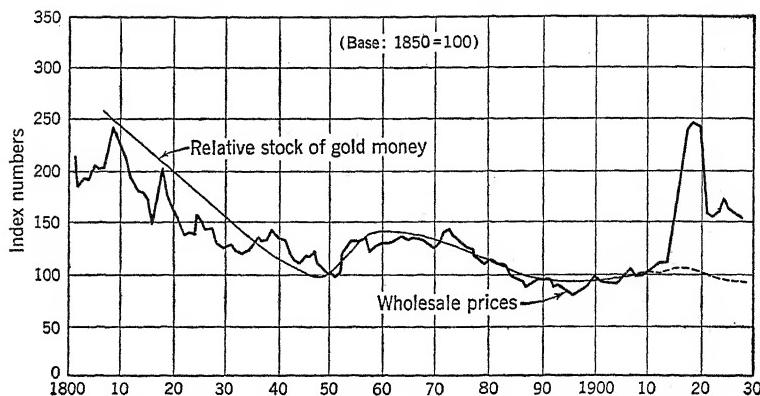


FIGURE 20. PRICES AND GOLD: WORLD WHOLESALE PRICES AND  
RELATIVE STOCK OF GOLD MONEY

From Gold Delegation Report, League of Nations.

level are not lacking. Professor Cassel of Sweden, in a report to the League of Nations, emphasized the influence of gold during the period 1850 to 1910. By estimating the normal growth in the world's stock of gold money and relating this to the world production of basic commodities, he calculated the relative stock of gold money. When, as shown in Figure 20, the index showing relative stock of gold money is compared with an index of wholesale prices for the world, there is a striking similarity during the period referred to above. Professor Cassel's conclusions have been criticized partly on the basis that the index of wholesale prices for the world is unsatisfactory, even though it be the only one available, and partly because of certain assumptions in calculating the normal expansion in the world stock of gold money. In any event the results are curiously similar to those which might be expected on the basis of Figure 19. Between 1850 and 1860 the stock of gold was increasing faster than the production of commodities and prices might be expected to rise as they appear to have done. Between about 1860 and 1880 the gold stock was not increasing as rapidly as the output of goods and during this period there was a tendency for the price level to decline. Between 1880 and 1910 when the gold

stock and the production of goods were expanding at about the same rate the general level of prices was fairly stable.

*Credit.* Granting there have been historical instances of gold exerting a dominating influence on the price level, there are persons who contend that credit has been and now is a more active force than gold in influencing prices in general. Many authorities agree that such is the case for relatively short periods of time, but do not agree with respect to longer periods. Among others Doctor Carl Snyder contends that even long-run price tendencies are influenced more by credit than by gold. He argues that "the actual media of exchange in modern countries are chiefly bank deposits or bank credit in general, and not 'currency' or gold; and perhaps only in the United States, up to 1915, was the volume of bank credit in any large country limited or controlled by the stock of gold or specie. In Great Britain, 'the world's banker,' the ratio of credit to gold rose unevenly, through a century or more."<sup>1</sup> In support of this view Doctor Snyder has shown a decided similarity between credit and general prices in the United States for nearly half a century. As illustrated by Figure 21 the credit and price lines are fairly close together during most of the period. Their greatest separation has occurred since 1929. The significance of the gap depends

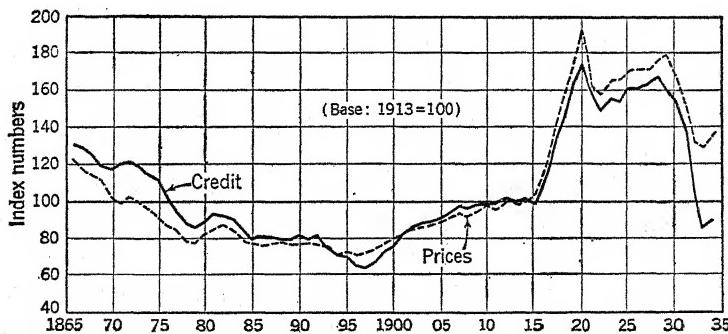


FIGURE 21. PRICES AND CREDIT  
Data from the Federal Reserve Bank of New York.

<sup>1</sup> *Quarterly Journal of Economics*, February, 1935, p. 194.

largely upon future events. Many highly exceptional events of the present period might be sufficient to account for a temporary departure.

*Volume of Trade and Velocity of Money.* As has already been noted, changes in velocity of money and volume of trade might influence the general level of prices. Apparently, however, neither exerts important influence on either long- or short-run price tendencies. In the long run both are fairly stable. The habits and customs on which the velocity of money depends cause the velocity to be fairly stable over long periods of time. During similar periods the production of goods increases at a fairly stable average rate. In view of this stability on the part of both factors they are eliminated as being directly responsible for long-run price changes. In the short run both velocity and production fluctuate, and would be more powerful influences on the price level were it not for the fact that they tend to be offsetting factors. They appear to increase and decrease together at about the same rate; thus any influence which the one might exercise to raise or lower prices is offset by the other's operating to move prices in the opposite direction.

Thus monetary factors seem to be mainly responsible for the longer-run movements of the price level. There are indications that at times in the past gold has exerted a dominating influence on world prices, although for some years in this country, and to an increasing degree in more recent years, credit in the form of bank deposits seems to have been the principal influence on the domestic price level. With the shorter-run changes of the business cycle, as will be seen in the following chapter, credit plays a highly important part, and even the price level itself may generate forces which in turn react upon it.

### III. CONSEQUENCES OF PRICE LEVEL FLUCTUATIONS

#### A. PURCHASING POWER OF MONEY

Any change, whether small or large, in the general price level means inevitably a change in the general purchasing

power of money. When prices rise, more money is required to buy the same quantity of goods that formerly could be purchased with less money. This means that a given amount of money can purchase less goods than formerly and hence the purchasing power of a unit of money has declined. On the other hand, when prices decline less money is required to buy the same goods. In this case a given amount of money can buy more goods and hence a unit of money has greater purchasing power. Indeed, prices of goods and purchasing power of money are two aspects of the same thing; in mathematical terms the one is the reciprocal of the other. Prices emphasize the amount of money which must be given for a certain quantity of goods and the purchasing power of money stresses the amount of goods which can be exchanged for a certain quantity of money. The inverse relationship between prices and purchasing power of money for the period since 1860 is shown in Figure 22. The low prices prevailing for many years prior to the World War mean that money had high purchasing power. Then during the war period prices rose and purchasing power fell. After 1929 prices fell and purchasing power rose until 1933, when it again declined in response to rising prices.

Since prices and purchasing power of money always move in opposite directions, it might seem that prices and purchasing power change to the same extent. For example, if prices rise 20 per cent, then it might appear that purchasing power falls

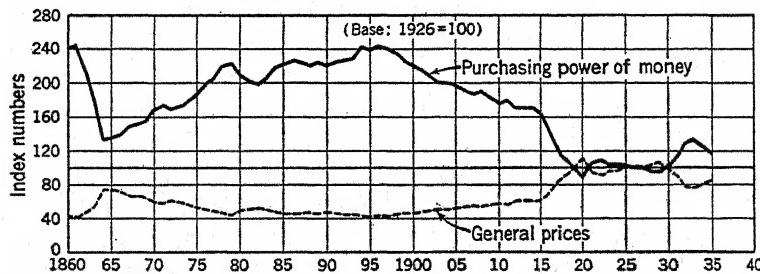


FIGURE 22. GENERAL PRICE LEVEL AND PURCHASING POWER OF MONEY

20 per cent; or if prices fall 30 per cent, then the purchasing power of money would increase 30 per cent. But this is not the case. At any one time prices and purchasing power coincide. That is, the purchasing power of \$1000 is the amount of goods that can be purchased with this amount of money. Thus the price of these goods is \$1000 and the purchasing power of \$1000 is the amount of goods for which this sum of money exchanges. While prices and purchasing power coincide at any one time, they do not necessarily coincide as between different periods. Suppose prices rise as they did between 1913 and 1929. Using 1913 as a base for comparison, prices in that year are represented by 100 and purchasing power of the dollar is also represented by 100, since at any one time prices and purchasing power coincide. By 1929 the index of prices had risen to 180. This means that prices were then 80 per cent higher than in 1913. To buy the same quantity of goods \$1.80 was needed instead of \$1 as formerly, consequently the 1929 dollar had only  $100/180$  or  $5/9$  or 55.5 per cent as much purchasing power as did the dollar in 1913. Thus when the index of prices rises to 180 the index of purchasing power falls to 55.5. Here an 80 per cent increase in prices is accompanied by a 45.5 per cent decrease in purchasing power. Or suppose prices declined as they did between 1926 and 1933. Using 1926 as a base for comparison as in Figure 21, prices and purchasing power in that year are both represented by 100. By 1933 the price index was 80, meaning that prices were 20 per cent lower than in 1926. To buy the same quantity of goods only 80 cents was required as against \$1 formerly. A dollar in 1933 had therefore  $100/80$  or  $5/4$  or 125 per cent of its 1926 purchasing power. Thus when the price declined to 80 the index of purchasing power rose to 125. This is equivalent to saying that a 20 per cent decrease in general prices means a 25 per cent increase in the purchasing power of money.

#### B. ECONOMIC INTERESTS

The changes in the purchasing power of money which occur inevitably with changes of the price level affect the economic

interests of various individuals and enterprises differently. Whether the fluctuations are brought about by forces which operate in the long or short run, the changes are likely to affect some interests adversely and others favorably. The long-run price level changes, which are being emphasized in this chapter, influence particularly those interests which arise out of long-term obligations.

*Borrowers and Lenders.* Rarely does the same price level change operate to benefit both borrowers and lenders. A change which benefits one tends to injure the other. Suppose a concern had issued \$1,000,000 worth of 5 per cent bonds payable in ten years. On this obligation the annual interest charges would be \$50,000, and a sinking fund of \$100,000 a year might be set aside for repayment of the loan. The entire servicing charges, including interest and sinking fund, might not involve more than 15 per cent of the anticipated earnings of the company. If the price level were to rise, as it did between 1910 and 1920 by about 90 per cent, the concern would have larger income than it anticipated. With the increasing income, the fixed number of dollars required for interest and repayment of principal could be met with increasing ease. But the same number of dollars received by the lenders had declining purchasing power as compared with the purchasing power of the dollars lent. Not only would the interest-income of lenders shrink in buying power as the price level rose, but the returned principal would have less purchasing power. If the principal were repaid when the price level was 90 per cent higher than when the loan was made, the lenders would receive around 48 cents in purchasing power for each dollar lent.

On the other hand, suppose the obligation had extended over the period 1925 to 1933. Toward the close of this period there was a sharp decline of about 25 per cent in the general price level, and with it the income of most enterprises fell. Suppose now that 30 per cent of a company's income, instead of an anticipated 15 per cent, was required for servicing charges on its bond issue. The further the price level declines the

heavier becomes the debt burden, even though the number of dollars involved remains the same. But the same decline in price level brings windfall gains to the lenders who, in receiving the same number of dollars, receive also more purchasing power in terms of goods. With the price level 25 per cent lower at the time the loan is repaid than when it was made, the lenders received 33½ per cent more purchasing power than they had lent.

The situation is similar with individuals who have purchased homes by borrowing on mortgages. If \$10,000 is borrowed at 5 per cent, there is an annual obligation of \$500 for the interest alone. As the price level rises there is likely to be an increase in the money income of individuals so that they can make their contracted payments with greater ease. But the lender, while getting the same number of dollars, finds that each dollar has less purchasing power than was expected at the time the contract was made. And if the price level should be higher at the time the loan is repaid than when it was made, again the lender receives less purchasing power than he lent. But when the price level declines, the situation is reversed. Incomes of individuals are likely to be smaller and out of them must come the same number of dollars. As the burden increases for the borrower, the lender is getting more purchasing power than he had anticipated, and will receive more than he lent if the obligation is paid at a time when the price level is lower than when the obligation was contracted.

*Landlords and Tenants.* The duration of some leases is so short that the economic interests of the contracting parties are affected only by short-run price level fluctuations; others, however, extend over a rather long period of time. These are likely to provide for the payment of specified amounts of money at designated periods of time regardless of the price level. In periods of rising prices these leases enable the tenants to gain at the expense of the property owners, but in periods of falling prices the same number of dollars which constitute a heavier burden on the income of tenants furnish the property owner with greater purchasing power.

*Insured Interests.* Especially with some types of insurance contracts, such as life and annuity policies, policy-holders or other beneficiaries find that their protection increases or decreases with changes in the price level. Individuals may carry life insurance for the protection of their families and when the time comes for payment of a designated number of dollars by the insurance company the price level may be so much higher than previously that the amount the beneficiaries receive is wholly inadequate to provide the anticipated protection. Or individuals may purchase annuities providing for designated payments by the insurance company periodically after the policy-holders have attained certain ages. They may find that if the price level declines they have more purchasing power than they had anticipated. The insurance companies, however, are not necessarily the parties who gain or lose in purchasing power, as their policy-holders lose or gain respectively. The companies are mainly custodians of funds and, as has been seen, are extensive lenders of these funds. Consequently those who borrow the funds held by the companies are the parties who benefit by the rising prices which reduce the purchasing power of payments received by policy-holders, and the borrowers suffer by the falling prices which increase the purchasing power distributed by the company as benefits to policy-holders and other beneficiaries.

In short, those parties, other than custodians of funds, having future obligations calling for the payment of a fixed number of dollars regardless of the price level, gain when the level rises and lose when it falls, whereas the recipient of the dollars gains by the falling level and loses by the rising level. Comparatively few salary or wage contracts extend over sufficient time for the economic interests of the parties thereto to be affected by long-run price changes. Even though the manufacturing of goods from raw materials to finished products may require considerable time, it is seldom long enough for long-run movements of the price level to affect the economic interests of buyers and sellers except when long-term contracts are made.

## C. ECONOMIC ADJUSTMENTS

There is a rather widespread belief that rising prices and high price levels are essential for prosperity whereas falling prices and low price levels are economically injurious. In this connection it is significant to notice the general course of trade and of the price level in the United States since 1870 as shown

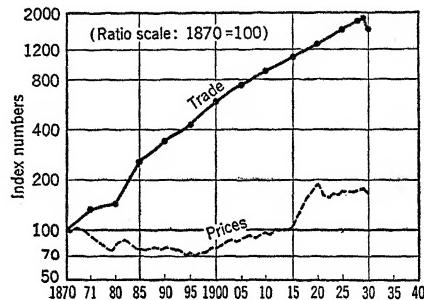


FIGURE 23. TRADE AND PRICES  
Data from Federal Reserve Bank of New York.

by Figure 23. Since neither rising and high levels, nor falling and low levels are the same, it will be convenient to distinguish high and low levels on the one hand and rising and falling levels on the other. In the following observations it must be remembered that periods of more than a few years' duration are being considered.

*High and Low Price Levels.* Considering first the relation of high and low prices to trade, there is no indication that the volume of trade expands more rapidly with a high than with a low price level. For most of the period covered by Figure 23 the price level was below its 1870 level, but trade continued to expand. When, following 1915, there was a higher level of prices there was no acceleration in the growth of trade. Moreover, when it is realized that the function of money is to facilitate trade, there is no reason why trade cannot be conducted as effectively on a low as on a high price level. When wages and other prices are adjusted to a low level, individuals receive a small number of dollars as income but

each dollar has high purchasing power, whereas with a high level more dollars are received but each has less purchasing power. Individuals are in the same relative position whether, for instance, they receive \$1 a day and pay \$8 a month for rent or receive \$4 a day and pay \$32 a month for rent. So long as various prices are adjusted to a given level there can be as much prosperity on a low as on a high level of prices.

*Rising and Falling Levels.* Despite the fact that changing price levels impair some and benefit other economic interests of individuals there are circumstances under which price level changes are predominately beneficial. Mention has already been made of their influence in keeping international trade in balance. Many of these changes occur during short periods of time, but some involve longer spans. So far as domestic trade alone is concerned, Figure 23 does not indicate that rising prices have been essential as a stimulus to production. Between 1895 and 1915 the price level tended to rise, but there was no acceleration in the speed with which the volume of trade increased. Even the very rapid and marked rise of the price level between 1915 and 1920 was not accompanied by any change in the rate at which trade was growing.

Strange as it may seem, the long-run price tendency most likely to contribute to general prosperity is a downward one. Economies of technical improvements, inventions, and discoveries, together with economies of large-scale production, result in lower production costs. These economies do not occur at the same time and to the same degree with all enterprises nor with all industries. Their spread is gradual and extends over a period of years. They may be passed on to investors as profits, or to workers as wages, or to the consuming public in the form of lower prices. When these economies are widespread and are shared liberally with the masses of consumers in the form of lower prices, the general level of prices tends to fall. If, on the other hand, a country is exhausting its resources, and if improvements in the methods of production cannot offset the increasing difficulties being experienced

in the creation of goods, costs of production will rise and there will be a rising general price level.

The evidence is quite clear that there has never been a stable level of general prices for any extended period of time. Especially the longer-run changes have been influenced mainly by the quantity of money in relation to the volume of trade, although gold money appears to be decreasing and credit-money increasing as a dominating factor in the price level. Most changes in the general level of prices operate to enhance some economic interests which individuals have at the expense of others. At the same time general price changes may serve a socially useful purpose in restoring balance within a highly complex system of specialization and exchange. This does not mean, however, that these changes are the only means of restoring balance or that all those changes, either long or short, which have occurred were essential or successful in stimulating production or in bringing about a better coordination of diversified effort.

#### QUESTIONS

1. What is meant by a price level?
2. Why is so much importance attached to the wholesale commodity price level?
3. Does the wholesale commodity price level of the United States Bureau of Labor Statistics appear to serve satisfactorily as an indicator of changes in the general price level?
4. What is the significance of a price level after it has been determined?
5. How, if at all, does the meaning of the formula  $\frac{M}{T} = P$  differ from that of the formula  $\frac{MV + M'V' + M''V''}{T} = P$ ?
6. Does either of the above formulas throw any light on what is responsible for changes in the general price level?
7. "The velocity of money as well as the number of money units is capable of influencing the price level." What is meant by this statement?
8. "Velocity is not the same for all kinds of money." Explain this statement.
9. How would the following tend to affect the general price level, assuming in each case other things remained the same:

Decrease in the volume of bank credit.

Increase in the velocity of official credit-money.

Decrease in the volume of trade.

10. "The forces responsible for long-run changes in the general price level are somewhat different from those responsible for cyclical swings." What is meant by this statement?
11. "There are differences of opinion as to the cause of long-run changes in the general price level." Evaluate the statement.
12. What is meant by the "relative gold stock"?
13. Is there reason to believe that changes in the production of gold are primarily responsible for changes in the general price level? Explain.
14. What reason, if any, is there for the contention that changes in the volume of trade and in the velocity of money might but do not cause changes in the general level of prices?
15. What relation is there between the general price level and the purchasing power of money?
16. If the price level increased 25 per cent, what change would occur in the purchasing power of money?
17. "Changes in the price level affect the economic interests of individuals differently." Explain.
18. "Persons can protect themselves in old age from changes in the price level by an annuity policy with a reliable insurance company." Do you agree?
19. "Rising price levels are essential for prosperity." Explain the validity or falsity of this statement.
20. By what line of reasoning is the conclusion reached that there can be as much prosperity with a low price level as with a high one?

## CHAPTER VIII

### UNSTABLE BUSINESS ACTIVITY

FLUCTUATIONS in business activity are considerably greater than is generally realized. Consumers on the one side are so accustomed to getting the kind of things they want at the time and place they want them that little thought is given to the instability created in meeting their demands. Business enterprises are so absorbed with their own particular interests that they give little or no attention to the instability their actions may create for other enterprises and other lines of business. Whether the fluctuations arise out of changes in conditions of demand or of supply they differ in a variety of other ways. Some are local and others widespread; some are repetitive and others sporadic; some occur regularly and others irregularly; some occur within intervals of a day and others at intervals of years. While all these fluctuations have some economic significance, those which are distinctly repetitive and broad in scope are particularly important. Such changes may be either seasonal or cyclical in character.

#### I. SEASONAL CHANGES

##### A. CAUSES OF SEASONAL CHANGES

Fluctuations which occur at fairly regular intervals within a year, but not more frequently than four times a year, may be designated as seasonal in character. This maximum limit of four changes reflects the quarters of the year dominated by the rotation of the earth around the sun.

*Climatic Conditions.* While there are no sharp breaks by which spring, summer, fall, and winter are separated, the periods possess identifying characteristics of a natural character such as rainfall, temperature, and humidity. These changes vitally affect the production of agricultural products.

The breeding of animals, fowl, and fish is to a large extent governed by the seasons. In addition to influencing conditions of supply, climatic conditions also influence the demand for some goods. This occurs, for instance, with clothing and coal. Throughout most of the United States heavier clothing is worn in winter than in summer, and with changing seasons come different fabrics and styles. In most of the garment trades there are at least two seasons (spring and fall), but in a few, such as fur garments, there is only one of any significance. While coal is used the year round in the generating of power, its use for heating stores, offices, factories, and homes is heavily concentrated in the few winter months.

*Habits and Customs.* In some respects seasonal fluctuations are influenced more today by customs and habits than by climate. Religious customs have greater effect on business activity than is generally supposed. Most religious holidays have become occasions for celebration. The Christmas season dominates the retail trade to such an extent that many establishments do the bulk of their entire year's business either at this period or in preparation for it. The Easter season probably comes second. During the Lenten or pre-Easter season trade declines in some lines, such as theaters and luxury goods. Toward the end of the season and in preparation for Easter Day, purchases of some things increase, especially clothing, greeting cards, candy, and flowers. Days set aside for the celebration of political events may create a seasonal demand for some products such as fireworks on the Fourth of July. In other cases, days or periods are inaugurated for the sole purpose of ushering in seasonal activity such as Straw Hat Day, August sales of furniture and furs, and the fashion-shows of clothing and automobiles. Among other customs arising out of business arrangements are the periodic payments of interest and dividends. These payments are usually made quarterly and stimulate purchases by consumers at that time. The concentration of business failures at the first of the year is accounted for largely by the practice of officially closing the books of concerns at the end of the preceding year.

**B. CONTROLLING SEASONAL FLUCTUATIONS**

Whether these seasonal fluctuations are dominated by climatic conditions or by habits and customs, most of them give rise to problems in the coordination of specialized activities. Employment, income, and costs are affected in a variety of ways. The necessity for maintaining equipment and facilities to meet peak requirements means that there is unused capacity a considerable part of the time. If costs are to be met, goods must sell at prices which cover expenses of idle machinery and men. Consequently prices are often higher than if productive facilities were used regularly. On the other hand, idle capacity is a leading source of cut-throat competition. The pressure of overhead costs drives concerns to cut prices so that they may get orders by which their idle equipment may be utilized. For the workers there arises irregularity in employment and wages; in some periods orders can be filled only by working overtime, while at other times there is no work. This is conspicuously the case in the manufacturing of fur garments. At times of active business wages are high; at other times they are low or even non-existent for many workers.

While much seasonality in the demand for or in the supply of particular goods cannot be eliminated, some of it can be, and the disrupting influence of the remainder can also be reduced. Improvements in coordination may be made along at least one or more of four lines, depending somewhat on the nature of the business.

*Diversification.* There is reason to believe that in some lines of business specialization has been carried further than is socially, if not individually, advantageous in view of the seasonality which controls the activity. A well-known illustration of diversification to meet such a situation is the combination of the coal and ice business which is found in many parts of the country. Attempts have also been made to market radios along with automobiles through the same retail agencies. One automobile manufacturing concern is reported as planning the manufacture of a radio for the purpose of furnishing its dealers with a side line for their off season in the sale of auto-

mobiles. Many agencies make a definite effort to build up their servicing activities as a means of providing for overhead during the dull selling season. The success with which effective coordination can be accomplished in this way usually depends on bringing together not merely activities with different seasonal peaks, but also activities for which existing employees, management, and equipment can be used to a considerable extent, if not entirely. For the most part such diversification as has been undertaken by larger concerns has been dominated mainly by an effort to stabilize profits with comparatively little regard to the stabilization of employment.

*Price.* Another direction in which the influence of seasonality can be modified is through different prices for peak and off-peak business. Resort hotels frequently offer lower rates for accommodation in their off season, whether it be summer or winter, than during the height of the season. Although seemingly inadequate, some use of this device has occurred in the retailing of anthracite coal. Steamship companies also offer off-season rates. The principle here is the same as that employed by electric companies in dealing with the daily peak in the consumption of current during the evening hours occasioned by residential use. By offering low rates to industrial users who require most of their current during the day, the companies are able to utilize their facilities more fully than would otherwise be possible.

*Storage.* A still different means of reducing the irregularity of operations in meeting seasonal requirements is through the accumulation of finished or partly finished goods during the off season. While this cannot be employed equally well in all industries, it offers more possibilities than have been utilized in some lines. An illustration of its use in a business of high seasonal consumption unaccompanied by style or fashion occurs in the manufacturing of cameras and films. One large concern has substantially constant production throughout the year except during the seasonal summer peak of sales, at which time the employees are given their vacations.

*Methods of Production.* Especially where consumption is

limited by seasonality in supply there are possibilities of changing the methods of production in some cases so as to make the supply virtually independent of natural forces. The use of greenhouses has been employed for furnishing some fruits and flowers in commercial quantities during the period in which they cannot be raised under natural conditions. The distinctly seasonal production of eggs is capable of being much reduced by artificial hatching and controlled raising of chickens. There are also possible advantages in producing some products synthetically in factories rather than under the natural conditions of the fields.

## II. BUSINESS CYCLES

### A. MEANING OF BUSINESS CYCLES

From the early days of human experience there have been good and bad times. Events of this kind were quite common even in Old Testament times. It may be recalled that in a dream one of the Pharaohs saw seven head of fat cattle followed by seven head of lean ones going to a stream to drink, and that Joseph interpreted this dream to mean that there would be seven years of abundance throughout Egypt followed by seven years of famine. This interpretation bears a striking resemblance to the experience among some nations in modern times with an average of one year of depression for every year of prosperity.

But the good and bad times of earlier days were not business cycles. They occurred before trade had reached any significant proportions. The rather serious disturbances experienced in ancient Babylonia and Egypt were dominated by circumstances different from those which appear to be responsible for most modern fluctuations of business. These early disturbances had their roots in famines, plagues, war, and civil disturbances. None of these was of an essentially business character.

Contrary to a widely held opinion that there have always been business cycles, these fluctuations appear to be products of comparatively recent times. Not until trade came to be

definitely organized around the use of money did fluctuations of the character known as business cycles develop. As already indicated, the use of money is old, and even coinage was invented in Asia Minor about 700 B.C. The economic life of large numbers of people, however, was not organized mainly around the making and spending of money until quite recent times. Part of the evidence that cycles are closely associated with the advanced use of money is indicated by the experience of such countries as China, India, and South Africa, where bad times are still dependent much more upon floods, droughts, and civil disturbances than upon business factors. Just when the shift occurred is uncertain, but it is judged to have come about in the eighteenth century. Hence business cycle fluctuations have probably not been in existence for more than two centuries.

The fluctuations which developed with the more advanced use of money were distinctly repetitive and occurred regardless of war, civil disturbances, drought, or flood, which were responsible for the irregular changes in economic well-being of people in earlier times. Business activity became a continuous series of upswings and downswings, with alternating prosperity and depression. This ebb and flow, rise and fall, of business activity causes it to be designated as cyclical in nature. The oscillations which have accompanied the upward trend of business activity in the United States since 1890 are shown in Figure 24.

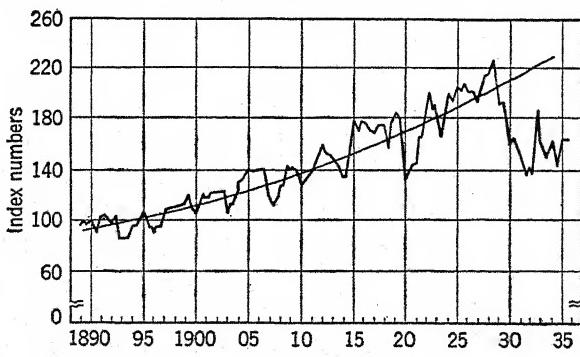


FIGURE 24. BUSINESS CYCLES

While virtually all kinds and aspects of business activity move in waves, all do not move in one giant wave. For instance, agricultural activity as a whole does not move with manufacturing as a whole; within these broad groups there are further distinctive movements, as exemplified in the cycles of corn and hog production and those of steel output. Some individual lines and aspects of business move ahead of the average, others lag behind; some lead on the upswing and follow on the downswing, or the opposite; some have peaks when others have valleys. In fact, so diverse are some individual and group movements that observers doubt if they can be combined significantly into a general average. For some purposes, however, there is justification in combining them by virtue of the fact that the individual movements act and react upon one another and most of them are affected by more or less common influences. It is this general movement to which attention is here given.

#### B. CHARACTERISTICS OF BUSINESS CYCLES

*Phases.* Each of these wave-like movements is itself composed of parts or phases which are designated in different ways. Broadly there are two parts: the rise and the fall. The rise is the movement from the bottom of the trough to the crest of the wave, while the fall runs from the crest to the lowest point of the trough. But both of these parts may be further separated. The early part of the rise is the revival or recovery phase and the latter part is designated as the period of expansion. The crest having been reached, the early part of the decline is the recession, after which comes the part known as contraction. The period in which activities turn from expansion to recession is sometimes called the crisis; if the turn at the peak is very sharp there is likely to be a period of disruption which creates a panic. Prosperity usually refers to periods of expansion, while depression generally designates the trough which includes both contraction and recovery phases.

With revival there is a gradual increase in the tempo of activity. Stocks of goods begin to move more rapidly, the

volume of production increases, prices become firmer with some tendency to rise, employees are given more opportunities to work, and some increases in employment occur. There is usually little increase in wage rates, although earnings expand through improvement in working time. Business enterprises begin to borrow and interest rates tighten but remain low in the face of large bank reserves. Orders are placed cautiously and some new equipment is installed. Losses decline and profits begin to appear more widely, thus increasing the optimism of investors and executives.

Expansion periods are those in which there is a considerable increase in the tempo of activities and rising confidence in the future. Goods are produced and ordered in larger quantities. Selling prices rise faster than costs. Full-time employment prevails and overtime work develops. Wage rates increase. Borrowing grows, bank reserves decline, and interest rates rise. There is more rapid turnover of goods and of money. New and more modern equipment with greater productive capacity is ordered extensively. Old buildings are torn down or remodeled and new construction occurs. Profits are growing, and encourage the establishment of new concerns.

With recession a decline in the rate of activity develops. Strenuous efforts are made to convert inventories into cash. Selling prices decline more rapidly than costs. The volume of production falls. Overtime work virtually ceases. Dismissal of employees increases and wage rates begin to sag. Pressure is placed on borrowers to repay or reduce their obligations rather than renew them. Bank reserves continue to increase, although interest rates remain fairly high. The ordering of new equipment declines sharply, profits decline, and business failures multiply.

In the period of contraction there is extensive revamping of business activities and policies. Production continues to decline and unused capacity increases. Competitive prices fall rapidly while monopoly prices may or may not fall. Unemployment grows, as does short-time work. Wage rates decline and payrolls fall sharply. Strikes are less frequent as

the growing unemployment reduces the bargaining power of workers. There is little ordering of new equipment. Borrowing declines, bank reserves increase, and interest rates fall. Business failures and financial reorganizations are numerous. Strenuous efforts are made to reduce costs in all directions and thus halt the decline of profits or the growth of losses. Side lines are often added in an effort to cover overhead expenses.

*Duration.* These waves of business activity are not uniform in their duration either in this or in other countries. An examination of those occurring in seventeen nations over an extended period of time indicates that the shortest was one year and the longest was twelve.<sup>1</sup> Italy has experienced both the longest and the shortest. Most of the 166 cycles studied were of about three years' duration. While this has been the most frequent span, the average duration is 5.2 years for all the countries combined. Their individual averages varied between 5 and 6 years, except in the United States. In this country there were 35 cycles during the 136 years between 1796 and 1932. This gives an average length of about 4 years and also the lowest average for any of the seventeen nations. But like other countries, the United States experienced more cycles of about three years than of any other length. The longest has been nine and occurred about half a century ago.

Not only does the entire span of the cycle vary, but also the length of its phases. The experience of the seventeen nations indicates that on the average about 24 per cent of the cycle's duration was consumed by the revival and recession. The remaining 76 per cent was divided about evenly between prosperity and depression. Prosperity reigned for 39 per cent and depression for 37 per cent of the time. Thus there was one year of depression for about every year (actually 1.07 years) of prosperity. Figuratively it appears that the pleasures of the night before are just about cancelled by the misery of the morning after. In fact for some countries the misery definitely exceeded the pleasure, as in Italy, Japan, and Brazil. Between

<sup>1</sup> See *Business Cycles, The Problem and Its Setting*, by Mitchell; National Bureau of Economic Research.

1889 and 1924 Brazil had one year of depression for every half-year of prosperity. Among longer cycles, or those of nine to twelve years' duration, the depression also consumed more time than did prosperity. On the average there was for each bad year only seven tenths of a year which was good. The experience of the United States was somewhat more favorable in this respect. Between 1790 and 1925 periods of prosperity averaged about 1.5 years for every year of depression. Moreover, the periods of prosperity were, as for England also, somewhat longer when the trend of wholesale prices was upward than when it was declining.

*Intensity.* Not only do cycles vary in duration, but also in their intensity. By this is meant the extent to which activity during a cycle departs from a base. In some cases the base used is the average level of activity during the cycle, but in others the general or normal course of activities forms the base. As the term normal is used here it does not mean the level at which activity should be but the level at which it would be if it had followed its long-range course. The Cleveland Trust Company under the direction of Colonel Ayres has estimated the fluctuations from a computed normal level for the period since 1790. From that time until the depression of 1929 the maximum fluctuations had been about 25 per cent above or below the normal course, and more frequently around 10 or 15 per cent. During the depression of 1929, however, activity fell to nearly 50 per cent of its normal level.

*Time of Occurrence.* In addition to the fact that most nations experience cyclical fluctuations, there has also been some tendency for them to occur somewhat simultaneously in a number of countries. This is suggested by Figure 25, in which the black blocks represent depressions; the white, prosperity; the gray, recessions; and the hatched, revival. The period of the World War activity is shown by the white block marked "W." There are always some circumstances peculiar to individual nations which are affecting the fluctuations of their activity but not influencing those of other nations, or at least not materially. Consequently one country may be experiencing depression and

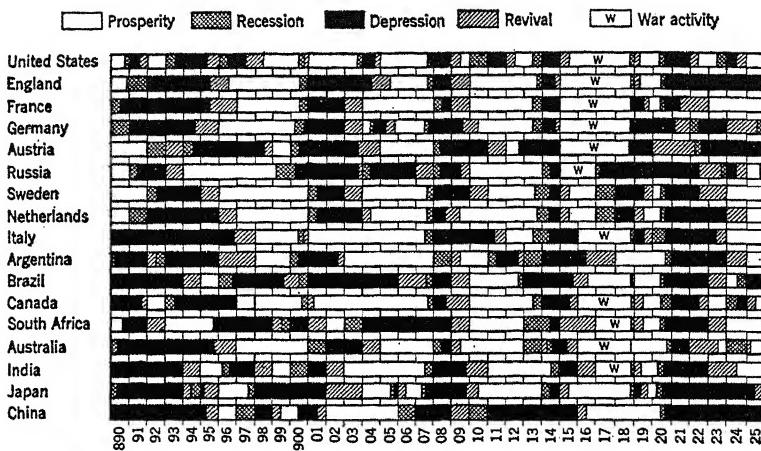


FIGURE 25. BUSINESS CYCLES AT HOME AND ABROAD

Reprinted with permission from *Business Annals*, W. L. Thorp, National Bureau of Economic Research, New York, 1926.

another prosperity. But as one glances up and down the chart, the white and black blocks show a tendency to occur in columns, thus indicating similarity in the time at which prosperity and depression are being experienced in different countries. This is not particularly surprising since the economic relations of nations were linked through trade and monetary standard and therefore countries were virtually forced to move more or less in lockstep.

### C. EXPLANATIONS OF BUSINESS CYCLES

There is probably no major aspect of business about which less knowledge exists than with respect to the cause or causes of business cycles. Excellent work in this field has been done by Professor Wesley C. Mitchell and others, but there are almost insuperable difficulties encountered in unraveling the highly complex network of forces which affect modern business activity. The bacteriologist who, by the use of test tubes, magnifying glasses, and guinea pigs or mice, can deliberately create experimental conditions for the purposes of acquiring knowledge of bacteria and their reaction on living organisms

has a task which is easy in comparison to that of economists who are seeking to follow the ramifications of economic forces in a constantly changing business world, with a view to explaining the cause or causes of the cyclical swings of business activity.

Although it is recognized that there is no satisfactory explanation of these causes some of the leading explanations for them may be considered briefly. To some degree the differences in explanations are in reality differences in emphasis on the importance of certain forces and on the way in which they operate. In considering the explanations it will be well to keep two points in mind. First, some circumstances may operate mainly, if not entirely, to initiate an upswing or a downswing, while others may intensify the movement when it gets under way. Secondly, while these swings have certain characteristics in common, they do not represent the same combination of circumstances in each case. At one time industrial activity may be dominated by the railroads and at another, by automobile manufacturing. Just before a recession there may be heavy speculation in securities at one time and in inventories of goods at another. A combination of circumstances at one time may be such that an invention or discovery will exert conspicuous influence on the stimulation of activity, while at another time the failure of a single financial institution may start the downward trend of activity. At one time fundamental changes in governmental structure and influence on business may be emerging, and at another there may be no marked changes of this kind.

*Natural Forces.* Among the earlier explanations of cycles, the operation of such natural forces as sunspots, magnetism, and rainfall was prominent. Even in more recent times the influence of rainfall has been stressed. The amount of rain has been found to move in cycles extending over a period of years. These cycles are believed to be responsible for crop yields. Not only are the prices of crops affected thereby but other activities as well. A large part of the crops are used as raw material for manufacturing, and as their prices change, profit margins and

prices for manufactured goods are affected. Moreover, cyclical crop swings increase and decrease the requirements for transportation, which in turn are reflected in the buying of materials and equipment for furnishing transportation services. Even though there is reason to believe that rainfall and other natural forces exert an influence on business conditions, there is insufficient evidence to prove that the cycles in which they move dominate the ebb and flow of business activity.

*Psychological Forces.* Another explanation of business cycles runs in terms of the operation of the human mind. The actions of individuals which immediately determine business activity are thought to be dominated by their attitudes of mind. Optimism stimulates activity and pessimism retards it. These attitudes, it is held, run in waves. Ellsworth Huntington argues that they are controlled largely by the natural force of weather conditions. These conditions influence health, which in turn affects mental attitudes. Others stress the magnifying and contagious aspects of optimism and pessimism. Through imagination, emotion and imitation, slight changes in activity can be visualized as having vastly greater importance than underlying conditions warrant. Consequently, as waves of optimism spread they give rise to excessive expansion along certain lines, and as pessimism spreads there develops similarly excessive contraction in various directions.

*Forces Within the Economic System.* Numerous explanations of the ebb and flow of business activity center around forces within the economic system. No attempt will be made to indicate all the lines of explanation, or even to follow the ramifications of those which are mentioned.

(a) *Prices.* It may be recalled that in the preceding chapter attention was called to the influence which changes in the price level might generate at the time they were occurring. To these changes some students attribute the cyclical swings in business activity. With rising prices business is stimulated. Purchasers are increasingly anxious to acquire goods before their prices go still higher. Prospects of higher future prices offer opportunities for speculative gains by building up inventories or stocks of

goods in warehouses at prevailing prices. The same price tendency encourages producers to furnish increasingly large quantities of goods. Interest, rent, salaries, and wages are based on contracts which remain substantially unchanged during short intervals of time. These costs do not increase as rapidly as production. On the other hand, declining prices curb activity. Prospective purchasers are reluctant to buy, even though they can afford to do so, on the chance that they can buy the same goods later at lower prices. In addition there are those who are anxious to buy, but who cannot afford to do so. The producers in turn find the curtailment in buying distinctly disadvantageous. With the declining prices some of their costs have fallen, but those which did not rise promptly before, such as wage and interest rates, do not decline promptly now. Consequently costs are high in relation to selling prices and loss margins take the place of profit margins.

While both present and prospective prices affect business activity, producers are thought to be guided more by those in the short than in the long run. This short-range view is likely to lead to excessive expansion and contraction of activities. When prices are rising there is a mad rush to take advantage of them by increasing production. Prevailing optimism encourages the extension of productive facilities by individual concerns without much regard to the actions of others. Suddenly there is a realization that the market for their goods is flooded. Contraction becomes the order of the day as prices fall. During this period, even though underlying forces are developing which will strengthen the market, there is likely to be little provision for the future demand until current prices furnish encouragement. By the time this occurs the shortage of goods in relation to demand is such that prices may rise rather rapidly, and there will then be another desperate effort to take advantage of the rising prices.

(b) *Money.* The level of prices may be influenced, as has already been seen, by monetary changes, and these have been made the basis for some explanations of the business cycle. Banks have considerable power to increase or decrease the amount of money

available for trade. It is believed that this can be accomplished through the interest rate, which affects the cost of doing business. There is, of course, the possibility that credit might exist and not be used; but here likewise the interest rate is expected to come into play. Cheap credit encourages borrowing with which expansion is financed, while expensive credit curtails borrowing and contributes to curtailed activities. It is contended that the interest rate is especially effective in controlling the extent of speculative activity. The building up of inventories by manufacturers, wholesalers, and dealers is encouraged by low and discouraged by high rates. A comparatively small change in the rate of interest is capable of materially affecting the prospective profit of the speculation.

Granting that the amount of money available for trade may affect prices, the price level itself may influence not only the demand for money, as previously seen, but also the supply of it. As prices rise and profits increase the market value of securities and inventories also grows. By pledging warehouse receipts and securities the amount of credit-money created expands. On the other hand, when prices decline the market value of collateral declines and the available credit diminishes. There is some reason to believe that frequently the creation of credit is deliberately intended to allow price movements considerable play and at times to accentuate the movements which are otherwise occurring. The timidity of bankers to raise interest rates in periods of rapidly expanding credit and rising prices, and their reluctance to lower them in the face of contracting credit and falling prices, contributes respectively to these movements.

(c) *Goods.* Some other explanations of the cycle run in terms of the circumstances and conditions under which goods are produced. One group stresses the lack of balance which develops between specialized lines of business in the creation of goods. Industries do not grow at the same rate; new industries, such as automobiles and electric equipment, are likely to grow faster than older industries, while some may be declining when others are expanding. But whatever the trend in the rate of growth may be for individual industries, this is not the actual

rate from time to time. Combinations of circumstances develop by which some industries get distinctly out of line with others, and if these industries, either individually or collectively, are among the more important ones, there develops serious maladjustment within the general industrial structure. Unless otherwise checked, a collapse of the structure will ultimately result.

Some explanations emphasize the importance of the capital goods industries, or those producing the machinery and equipment by which consumers' goods are made. This is an important group of industries and ordinarily furnishes considerable employment. As will be seen in a later chapter, these industries are in a peculiar position with respect to the influence which ultimate consumers can exert upon their activities. A small increase in consumer buying generates forces which create large activity in these industries, while a small decrease in consumer buying can bring a sharp curtailment in activity of the capital goods industries. It is believed by some that inventions, discoveries, and technical improvements exert an important influence on these industries, which in turn influence business generally.

Another explanation stresses the fact that competition is not permitted to exert the directing and coordinating influence which has been attributed to it. Monopolies, interferences, and various kinds of rigidities exist which not only create maladjustments but also prevent their elimination before their cumulative influence has resulted in a general collapse of business.

(d) *Income.* One of the oldest explanations of cyclical fluctuations of business centers around the distribution of income. The fact that some persons have tremendously large incomes while the majority of people have small ones is believed to create a maladjustment. The wealthy save most of their incomes, and the savings are used largely to finance the creation of facilities for further production of goods intended for consumption by the masses of the population. But the income received by the masses, mainly in wages and salaries, is

insufficient to buy the goods produced at the prices charged. Thus production exceeds consumption of goods and ultimately the disparity becomes so great that forced liquidation of goods at lower prices is unavoidable. In the period of liquidation, prices tend to fall faster than wages so that the masses have increased purchasing power. The income of the wealthy, mainly in interest and dividends, declines so that they must spend more of their incomes for consumable goods and thus save less to finance further production. But as surplus goods are liquidated prices tighten and rise. They continue to rise faster than the income of the masses. Along with the higher profits furnished by rising prices, the income of the wealthy increases, as does also their saving. Once again production is on its way to outstrip consumption.

(e) *Self-Generating Forces.* While many explanations of the cycle are in terms of particular forces which in themselves may or may not be repetitive, some students, notably Professor Mitchell, lay stress on the interrelation of forces which comes into play when business activities are organized around the use of money. This interrelation of forces is such that once the cycle is started it tends to perpetuate itself and may therefore be said to be self-generating. Viewed in this way, each cycle does not have a separate cause but is linked to others in an endless chain of events. Any one phase of the cycle grows out of the preceding phase and in turn breeds the following one. Thus in the period of depression the seeds are sown which generate revival. Within this phase there is further generation of circumstances which bring about prosperity. During prosperity the seeds are sown which develop into recession. This phase in turn generates the circumstances which bring about an appreciable contraction of activities known as depression and in which the foundation for recovery is laid. It is in such manner that business is thought to move in ceaseless waves, each generated by the one before it and generating the next.

The link connecting the phases of the cycle appears to be the accumulation of inventories or stocks of goods by business enterprises. With a rising price level and a strong demand for

goods in the period of prosperity, the accumulation of inventories is stimulated, as previously observed. In time the increasing rate at which inventories have been accumulating begins to decline, although inventories are maintained at high levels. Retailers buy less from jobbers and wholesalers, they in turn buy less from manufacturers, who likewise buy less raw materials and equipment from the producers. Consumers' buying holds up for a time, but as business concerns curtail their activities, the reduction in payrolls curtails the buying of goods, as does also the later reduction in wage rates. Now producers not only cease increasing their inventories but seek to unload them. Further purchases are made cautiously and in considerably smaller quantities. This generates still less business activity, and the further removed from ultimate consumers the concerns are in the productive process, the more severely is their activity curtailed. Purchasing of new equipment virtually ceases, thus affecting the capital goods industries severely. In time, inventories decline under the more persistent buying of ultimate consumers, who, even though unemployed, resort to their savings or personal credit as a means of obtaining goods required for current living. As a consequence of the buying, stocks of goods, even though low, must be replenished and additional ordering develops. This calls for more employment which gives consumers more buying power. As revival begins there are more purchases by business concerns and more employment. The relay influence of retail buying does not stop with the manufacturers of those goods, but continues on in even larger proportion to the producers of raw materials and particularly durable equipment. This is accompanied by rising prices, which once again stimulate the accumulation of inventories.

#### D. CONSEQUENCES OF BUSINESS CYCLES

Every economic system must have some flexibility, and this factor is particularly important under an arrangement in which individuals have considerable freedom as producers and as consumers. Even such a massive and seemingly inflexible

structure as the Empire State Building in New York City is not so rigid as it seems. In its construction, provision was made for a sway which at its top extends over several feet. In this way it is enabled to adjust itself in meeting windstorms without cracking. Similarly an economic system must have flexibility to meet changing conditions of demand and supply.

This does not mean that the cycles as now known are essential. It may be that under a system of private business rather forceful purging is occasionally necessary. The depression is a more or less automatic means of clearing out some unnecessary enterprises and uneconomic conditions which develop in periods of so-called prosperity. In this way business relations may be brought into a working balance. If a substantially complete balance were restored between specialized lines of production and between prices and costs, there would be more merit to a depression than is actually the case. Not only do depressions fail to eliminate satisfactorily old maladjustments, but they create new ones. It is bad enough to burn down a building in order to roast a pig, but vastly worse if the pig gets away and isn't roasted. In any event some of the broader consequences of the cycle may be noted, for it is with these in mind that proposals have been made and some steps taken to control the oscillations.

*Purchasing Power of Money.* In the same way that long-run price level changes affect the purchasing power of money, so do the price swings which accompany the cyclical changes in business activity. But these short-run price movements also affect many persons very vitally who are slightly, if at all, affected by the long-run changes.

(a) *Debts.* Many debts and closely allied obligations run over comparatively short periods of time; but regardless of the time period, any increase in price level means a decrease in purchasing power of money and any decline in the level increases purchasing power. Since short-run changes are more numerous and often more extensive than long-run fluctuations, there is more opportunity for debtors to benefit at the expense of creditors with rising prices, and for creditors to gain at the

expense of debtors with declining prices. Business concerns with notes outstanding, and home-owners with mortgage obligations, alike find these claims on their incomes more burdensome as prices decline and a lighter burden as prices rise. On the other hand, bondholders and recipients of annuities and pensions are able to buy less goods with the money they receive in the upward than in the downward swing.

(b) *Wage Income and Cost of Living.* The cyclical swing also affects wage-earners, to whom the long-run price level changes have virtually no importance. Whether wage contracts are formal agreements, as with some executives and some union labor organizations, or whether they are informal understandings, as in most cases, changes in the rate of pay occur only at intervals, which may be regular or irregular. In any event, workers tend to benefit, as has been seen in periods of declining prices, so long as they have employment, since the prices of the goods they buy tend to fall more rapidly than their wage rates. On the other hand, with a rising general level of prices, the cost of living tends to increase faster than their wage rates, thus reducing the purchasing power of the money they receive. In the downswing of the cycle, the spending power of the workers may be curtailed by reduced working opportunity before the rates of pay decline, and in the upswing their spending power may expand by virtue of increased working time before wage rates rise.

(c) *Cancelling Gains and Losses.* Just how much the economic interests of individuals are affected by price level changes is difficult to determine. To some extent benefits cancel injuries; the same change in the price level which enhances some economic interests of an individual diminishes others. An instance of this situation is that of a home-owner who is carrying a mortgage on his house and who also has an investment in government bonds. As a bondholder he benefits by a declining price level, but he suffers as a mortgagor. To some extent therefore the influences of price level changes cancel. But in most instances there is either a net gain or a net loss, although precise determination of the amount is impossible. The can-

celling process operates to some extent also between periods of time, with the gains of one period cancelling the losses of another. If the buying power of a worker is less in one period it may be more in another provided among other things he has a job. Debtors who experience hardship at one time may derive benefits at another, provided they are not called upon to make final settlement of their obligation during the period of hardship. Similarly a creditor who loses purchasing power with rising prices may gain with falling prices, provided certain other things do not happen, such as the failure of the debtor because of the same falling prices by which the creditor would otherwise benefit. Seldom are persons in a position where their net economic status remains unchanged. Generally they receive unexpected gains or equally unexpected losses.

*Waste.* These shifts in buying power would be serious enough if they merely caused incidental inconvenience, but they are actually accompanied by serious social waste. This is true in periods both of depression and of prosperity, and of human and of material resources.

(a) *Material Resources.* Material resources are dissipated in a variety of ways. For instance, during prosperity there is wasteful cutting of lumber, mining of coal, and extraction of oil under the influence of rising prices and large prospective profits. Lumber and other products are used lavishly in the quick and often poor construction of buildings and other equipment. In many instances buildings and equipment are produced when available facilities are quite adequate to meet the needs of society, provided the existing facilities were coordinated. Although in the period of depression the waste of natural resources is greatly reduced, the waste of idle machinery and equipment produced during the intense expansion continues. Physical depreciation may be greater with equipment which is idle than with that which is in operation, and the future usefulness of much expensive machinery is even more seriously curtailed by the virulent force of obsolescence. Not infrequently capital equipment created in the height of prosperity is used only slightly before it becomes idle, and by the time

activity recovers the equipment is so out of date or unsatisfactory that it must be discarded for new.

(b) *Human Resources.* Even more serious in many respects is the waste of human resources. It is a notorious fact that under the pressure of increased activity during the period known as prosperity, the standards of quality decline. Workers are speeded up at a sacrifice of good workmanship; quality gives way to quantity as the dominating consideration. Increasingly large amounts of labor are expended on goods whose appearance is a deceptive guide to their serviceability. Subsequently, when markets for various goods are flooded and goods are destroyed for lack of a profitable market, the fact that labor was previously paid for its services does not make the expenditure of effort any less wasteful. The most ravaging wastes occur in the period of depression, when there is at least reduced working opportunity and possibly none for millions of workers. Along with the bodily suffering through reduction or loss of income with which to buy the basic necessities of life, there is considerable physical deterioration and mental anguish. Individuals must give up standards of living to which they had become accustomed during prosperity, and in many cases must accept charity.

#### E. PROPOSALS FOR CONTROLLING BUSINESS CYCLES

Two methods have been proposed for curbing cyclical fluctuations. One is by flattening off the peak of prosperity and the other is by filling in the valley of depression. The leading proposals center around the control of credit, unemployment, insurance, public works, and government operation of business.

*Control of Credit.* Through the devices available to the Federal Reserve System, namely, rediscount rate, reserve requirements, and open-market transactions, it is possible to exercise considerable control over the creation of credit. By tightening credit in periods of rising prices it is believed that excessive expansion of business activity can be materially reduced. The same mechanism can be employed to prevent such drastic liquidation as is likely to develop in a depression. The

Reserve System can probably do more to curtail excessive expansion of activity than excessive contraction. The loosening of credit with lower interest rates and other means would contribute ordinarily to less intense contraction of business. It is the opinion of some, however, that credit control is ineffective in curbing either excessive expansion or contraction of business activity.

*Unemployment Insurance.* Through a device not unlike that used by corporations to protect dividends in periods of reduced corporate earnings, it is proposed to protect wages in periods of reduced individual earnings. An unemployment reserve would be accumulated in good times and used to pay workers in periods when they are unemployed. Certainly there is at least as much justification for compensating workers when they are idle as there is in compensating the owners of capital for idle equipment.

The compulsory payments by enterprises for unemployment insurance is believed by some to be a means of curtailing excessive expansion of business activity. Such expansion is temporary and gives rise to unemployment, which has not generally been considered a cost of production. If concerns were required to pay for their unemployment, these payments would be included as costs, and concerns would, it is thought, seek to minimize them by stabilizing employment. Much as this result is to be desired, there are serious doubts that unemployment insurance contributions can accomplish it. Insurance costs are likely to play too small a part in the aggregate production cost for them to exert much influence on the profitability of temporary expansion in activity.

As a curb to excessive contraction, insurance is likely to be somewhat more effective. At times of declining business, the insurance reserves will be released as workers become unemployed. In this way their purchasing power will not fall as low as it otherwise might, and the market for consumers' goods will receive support which it passes in turn to other industries. Assuming that insurance reserves can be liquidated without stimulating additional disorder, and that the amount of these

payments is sufficiently large to be significant, it is possible that unemployment insurance may be made a means of curbing some kinds of business contraction.

*Public Works.* The use of government projects such as building roads and public buildings has been suggested as a balance wheel for business activity. In the past much of the construction work and general improvements of federal, state, and local governments has been done in periods of prosperity when funds were easily available. At the same time these projects were in competition with private undertakings requiring labor and capital. It has been suggested that as much governmental work as possible be shifted to periods in which private work is less active. Immediately necessary governmental projects would be undertaken whenever needed, but projects which were in the nature of improvements could be easily delayed until normal employment was not sustained by private business. Then the government would step in with a view to sustaining employment and stimulating private enterprise. In this way the government would reduce its buying in periods of active business and increase its buying when business activity tended to decline.

While the intention of this plan is commendable and seems to be quite logical, its probable influence in stabilizing business is somewhat doubtful. Among the reasons for doubt is that government projects cannot be started and stopped quickly enough to act as a balancing factor. Most of the unemployed equipment is privately owned, and hence can be directed to government uses in peace time only on the basis of contracts. Even if all specifications for projects were available promptly (which is unlikely), considerable time is consumed in receiving bids and letting contracts. Unless government funds were put into operation quickly their sustaining influence on the market would be impaired. After projects are started it is usually expedient to complete them. The amount of work which could be easily started and stopped would scarcely involve sufficient expenditures to be significant in comparison with the curtailed expenditures of private business. During the depression of

1929 all the discussion of public construction as a means of stimulating business did not result apparently in even maintaining the pre-depression level of public works. Aggregate expenditures of federal, state, and local governments for this purpose fell below their earlier level thus contributing to the depression instead of relieving it by taking up some of the slack in private construction.

*Government Operation.* It is argued by some that the cycle is incapable of being effectively controlled under a system of private business. Even if the cyclical swings in productive activity are affected by natural forces, the influences of these forces is held to be greatly intensified by the quest for private gain. Only by eliminating the motive of private profit and substituting social service, it is argued, can the cyclical swings be reduced to their minimum. This requires the substitution of public for private administration and control. It is probably true that governments would be able to control cyclical fluctuations more effectively than private interests. But unless careful and intelligent provision were made for directing and coordinating specialized activities, other forms of instability, more serious in nature than the cycle, might take place. In this connection the experience of Russia, with virtually complete government operation of business, is somewhat suggestive.

#### QUESTIONS

1. What circumstances give rise to seasonal fluctuations in business activity?
2. Along what lines may steps be taken to reduce seasonal fluctuations?
3. "Good and bad times of earlier days were not business cycles." Explain.
4. Approximately when did business cycles make their appearance?
5. Some authorities argue that there are cyclical swings in business activity but that there is not a business cycle. What is the basis for this view?
6. In what respect can business fluctuations be said to be cyclical?
7. What is meant by "phases of the cycle"?
8. "Business cycles are fairly uniform in length." Is this statement supported by the experience of either the United States or other countries?
9. Describe some of the characteristics found in each phase of the cycle.
10. What is meant by the intensity of business cycles?

11. "Business cycles occur simultaneously throughout the world." Evaluate the statement.
12. What circumstances give rise to different explanations of business cycles?
13. Along what leading lines have explanations been offered of business cycles?
14. "During the business cycle changes in the price level may be a cause for changes in the amount of money." How does this come about?
15. What is meant by the self-generating explanation of the cycle?
16. Are the same economic groups affected in the same way by cyclical changes in the price level as by longer-run changes?
17. "During the cycle the gains and losses arising from price level changes tend to balance." Evaluate this statement.
18. In what respects can the business cycle be said to create waste?
19. "Most proposals for controlling the business cycle seek to cut off the hills and fill in the valleys." What is meant by this statement?
20. Explain how each of the leading proposals for controlling cycles is expected to operate.

## CHAPTER IX

### LARGE-SCALE ENTERPRISES

BUSINESS activity and business relations are sufficiently affected by the existence and conduct of large enterprises for them to receive separate consideration. It will be realized, of course, that in most lines of business large and small enter-

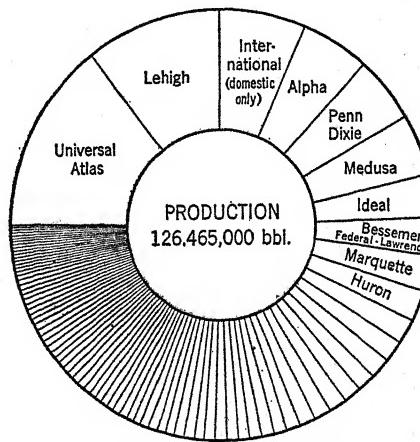


FIGURE 26. SIZE OF ENTERPRISES IN CEMENT INDUSTRY  
Reproduced from *Engineering News-Record*, by permission.

prises exist side by side. An illustration of this situation in the cement industry is shown by Figure 26. At the one extreme are the few giants; at the other are the numerous pygmies with an assortment of sizes in between.

#### I. MEANING OF LARGE-SCALE

In any reference to large-scale enterprises one must keep in mind the fact that there are different ways in which enterprises may be large. The same enterprise may be large-scale in some respects and small-scale in others.

#### A. GENERAL TESTS OF SIZE

The tests of size most commonly employed fall into two groups. The one emphasizes the volume of business and the other the requirements for production.

*Volume of Business.* Probably the most frequently used test is the volume of business a concern does. This may be judged in terms of money income or, in some cases, in terms of physical output. At times both tests may be used, but in others only the former is feasible.

(a) *Money Income.* As indicators of size there are different types of income each of which is important for certain purposes. The most widely employed types are gross, operating, and net income. Gross income represents the receipts of an enterprise without much regard to the source from which they come. So long as an enterprise derives substantially all of its receipts from the sale of its own goods or services, such income usually reflects its volume of business. But many concerns have other sources of income, such as dividends from subsidiaries or interest on its investments. The latter is true of insurance companies. The operating income excludes such items and emphasizes the receipts from the productive activity of the enterprise itself. For some purposes, however, net income is more significant. This is obtained by deducting certain expenses of operation, such as materials, labor, and depreciation. Further subdivisions of net income may be made, such as income before and after taxes and interest are paid.

When net income, as computed under the regulations of the Treasury for purposes of taxation, is examined, some interesting results are disclosed. In the relatively prosperous year of 1929, an analysis of about 270,000 income returns for corporations with taxable net income showed the average to be about \$43,000. But this is not the typical figure. At the one extreme, as shown by Table 5, about one tenth of 1 per cent of the concerns had net incomes of over \$5,000,000, while nearly 80 per cent had net incomes of less than \$10,000 and nearly 70 per cent had less than \$5000. On the other hand, the few enterprises with large income accounted for 42 per cent of the

TABLE 5. DISTRIBUTION OF NET INCOME  
As shown by 269,430 corporation returns to the  
United States Treasury Department in 1929.

Net Income	Percentage of total returns	Percentage of net returns
Under \$5,000.....	66.7	3
5,000 and under 10,000.....	11.0	2
10,000 and under 25,000.....	10.6	4
25,000 and under 50,000.....	4.6	4
50,000 and under 100,000.....	3.1	5
100,000 and under 500,000.....	3.0	14
500,000 and under 1,000,000.....	0.5	8
1,000,000 and under 5,000,000.....	0.4	18
Over 5,000,000.....	0.1	42
	<u>100.0</u>	<u>100</u>

entire net income reported, while those with less than \$10,000 accounted for only about 5 per cent of the total.

(b) *Physical Volume.* While money incomes may at times be a satisfactory guide to the size and the relative importance of an enterprise, there are times when it is more significant to make comparisons on the basis of physical units. It has been noted previously that money units are especially unsatisfactory when prices in general are changing. For example, if prices are declining, it is quite possible for the money volume of business done by a concern to be declining while the physical volume remains the same or even increases.

When physical quantities are used to determine size, the comparison may be made in either of two ways. In some instances comparisons are based on the capacity for production. At best this figure is none too satisfactory because it depends on so many considerations which vary as between enterprises, such as their normal working time. Actual production is also likely to vary from the normal capacity. In periods of extremely active business, concerns may exceed their technical capacity of normal times, and in periods of poor business fall far below it. Then, too, concerns may deliberately control their production for the purpose of maintaining higher prices than would be possible by operating at capacity. An illustration of a wide gap between capacity and actual production is also shown in Figure 26. The large outer circle represents

capacity production as divided among the enterprises in the cement industry, and the center black circle represents actual production in 1931. Which of these two figures is the more significant again depends upon the purpose of the comparison.

*Requirements for Production.* However useful for some purposes the volume of business may be as a test of size, it is not satisfactory for others. Two concerns doing the same volume of business may operate in quite different ways from the standpoint of the relative amounts of labor and capital required.

(a) *Investment.* In any case the investment in an enterprise is one of the most widely used tests of its size and importance.

TABLE 6. "BILLION DOLLAR CLUB"<sup>1</sup>  
January, 1936

Company	Assets in Billions
Metropolitan Life Insurance Co. . . . .	\$4.2
Prudential Life Insurance Co. . . . .	3.1
American Telephone and Telegraph Co. . . . .	2.9
Chase National Bank . . . . .	2.3
Pennsylvania Railroad . . . . .	2.2
New York Life Insurance Co. . . . .	2.2
Standard Oil Co. of New Jersey . . . . .	1.8
National City Bank (New York) . . . . .	1.8
Guaranty Trust Co. (New York) . . . . .	1.8
Southern Pacific Railway . . . . .	1.8
United States Steel . . . . .	1.8
Equitable Life Assurance . . . . .	1.8
New York Central Railroad . . . . .	1.7
General Motors Corp. . . . .	1.4
Consolidated Edison . . . . .	1.3
Bank of America. Nat. Trust and Savings Ass'n (including Bank of America, Calif.) . . . . .	1.2
Atchison, Topeka and Santa Fe . . . . .	1.2
Cities Service . . . . .	1.2
Mutual Life Insurance (New York) . . . . .	1.2
Baltimore & Ohio Railroad . . . . .	1.2
Commonwealth and Southern . . . . .	1.1
Union Pacific Railroad . . . . .	1.1
Continental Illinois Bank and Trust . . . . .	1.1
Northwestern Mutual Life Insurance . . . . .	1.0
Associated Gas and Electric Co. . . . .	1.0
Bankers Trust Co. . . . .	1.0
Total . . . . .	<u>\$45.8</u>

<sup>1</sup> Philadelphia Record, July 24, 1936.

But here again there are several ways in which investment may be viewed. If only the direct investment of owners is considered, as represented by shares of stock, the investment is usually smaller than if accumulated surplus is also considered. But in many enterprises a considerable part of the investment is furnished by bondholders and for certain purposes this must also be included in the total. Not infrequently concerns are financed largely by banks and by commercial creditors. These investments are represented by notes and accounts payable, and for some purposes these must be included as a part of the investment. Not infrequently the total assets are used as indicating the financial strength of concerns regardless of the source from which the assets are derived.

Incidentally, on the basis of assets "America's Billion Dollar Club" had a membership of twenty-six companies at the end of 1935 as compared with twenty at the beginning of the 1929 depression. This designation is sometimes applied to the group of companies whose assets exceed a billion dollars. The companies in this group and their approximate assets are shown in Table 6. It will be noted that it includes six each of insurance companies, banks, and railroads, four utilities, one steel, and one automobile company.

(b) *Labor.* For some purposes the size of enterprises is measured by the number of workers they employ. By the extensive use of automatic machinery a concern may be large from the standpoint of both the investment it represents and the volume of business it does, but small as an employer of labor. When the number of employees is used as a test of size it is often necessary to distinguish between a firm and an establishment. Many firms, such as chain stores, have numerous establishments. But here again the purpose of comparison determines whether the aggregate number employed or the number in each unit is important as a test of size.

(c) *Land.* Even though land is employed in all industries, its use in comparing size of enterprises is restricted to agricultural lines. Here the customary unit of comparison is the acreage of farm or of timber land.

**B. COMPARATIVE SIZE**

On whatever basis the size of enterprises is measured, there will be differences, but the significant ones are often comparative rather than absolute. Whether animals are measured in size by height or weight, mice are always smaller than elephants, hence there are absolute differences. But neither all mice nor all elephants are the same size. Some mice, however, are not only larger than other mice but are larger than the usual run of their species. These may be said to be large animals in a comparative sense, even though the largest mouse is much smaller than the smallest elephant.

When reference is made to large-scale enterprises, this does not necessarily mean only those which are large in an absolute sense. It may be that these extremely large ones are being contrasted with all other enterprises. But more generally those which are large in only a comparative sense are also included among large-scale enterprises. If the typical size of enterprises were about the same in all lines of business there would be no need to distinguish between absolute and relative differences of size. In reality concerns in some industries tend to be considerably larger than those in others. Judged on the basis of capital assets, for example, the public utility field, including transportation, was far above other industries in the average for reporting firms as shown by income tax reports of 1932. The average here was \$2,850,000. Next in order was mining and quarrying, with \$640,000, then manufacturing, with \$312,000, followed by financial institutions, with \$144,000, construction, with \$44,000, trade, with \$35,000, and farming, with \$8000.<sup>1</sup> Within these major groups there were further distinctive differences. In the manufacturing field, the chemical industry was the giant, with average capital assets of \$882,000, followed by the metal industry, with an average of \$508,000, while the textile industry averaged only \$148,000, and printing and publishing only \$85,000. With enterprises tending to distinctly different sizes as between industrial groups there is need to distinguish for many purposes

<sup>1</sup> Value of land, buildings, and implements according to 1930 Census.

between absolute and comparative size. An enterprise which is virtually a pygmy, in relation to the largest enterprises that exist, may be a giant in its own realm and exercise the influence of a giant therein.

## II. DEVELOPMENT OF LARGE-SCALE ENTERPRISES

### A. TYPES OF EXPANSION

The expansion by which enterprises acquire large-scale status occurs in different ways with respect to what is done and the way it is done. Activities may be expanded along specialized or diversified lines in the course of which multiple units are likely to be established and other concerns involved.

*Single vs. Multiple Unit Expansion.* Some concerns are single unit enterprises in that operations, including management, are conducted at a single establishment. Most of those personally owned are concerns of this type. In expanding activities the physical size of the factory, store, office, or farm is increased. Old structures or quarters may be enlarged or abandoned for new ones, but all operations continue to be at one place. Occasionally these units attain considerable size, but they are likely to be comparatively small. Most of them serve local markets which do not offer opportunities for large-scale operation.

Multiple unit enterprises are those whose activities are conducted at more than one establishment with the units operating under the direction of a central office. The tendency to operation of this kind is greater with the corporate than with the personal forms of organization. According to the last Census about 25,000, or 24 per cent, of the manufacturing establishments owned by corporations were directed from a central office as against only 2 per cent with personally owned establishments. The extent to which concerns expand by increasing the number of units varies among different lines of business, but is greatest in the field of merchandising. Here chain-store operation is quite prominent. According to a Federal Trade Commission report, the number of chain-store

companies increased from 2 in 1886 to nearly 1700 in 1929 and then declined to about 1500 in 1930. The total number of stores, however, began with 5 and has increased continuously to 69,500 in 1930.

*Internal vs. External Expansion.* When a concern expands independently of others its growth may be said to be internal in character. This type of expansion has been rather characteristic of the Ford Motor Company. More and larger plants are built through reinvested earnings. Instead of actually constructing new plants, some already in existence may be purchased outright with a view to obtaining facilities for production rather than good-will or customer contacts. Other large concerns which represent internal growth are Coca-Cola, Eastman Kodak, and Firestone. With external expansion, on the other hand, arrangements with other firms are necessary. For instance, chain-store enterprises have expanded mostly by opening new stores, but some expansion has come through acquiring existing stores together with their customer contacts and good-will. The first record of a chain acquiring an already established store occurred in 1910, but not until more recent years did the acquired stores account for more than about 10 per cent of the units added in any year. In 1929, however, with a record high of 10,400 stores added to chains, 40 per cent were acquired as against 60 per cent newly opened. This change was accounted for largely by the failure of some chains and the acquisition of their units by other chains.

(a) *Leases.* Expansion without an investment in the property acquired may occur through the use of leases. Such arrangements are used to some extent by many enterprises, and in particular lines of business leases form an important device for expansion of activities. If chain-store enterprises had to purchase land and buildings for all their stores, such chains as the Atlantic and Pacific Tea Company and many smaller ones would probably not exist. By means of leases they are able to employ the bulk of their funds in the handling of merchandise rather than tie up a large part of their money

in land and buildings. Railroads likewise are often able to expand their activities by leases which enable them to use such facilities as tracks and terminals of other roads.

(b) *Consolidations.* A more important means by which a company may acquire large-scale status is by consolidations. In popular usage this term relates to almost any kind of a combination of enterprises. Strictly speaking, it means the complete fusion or union of property ownership and interests by two or more concerns which were formerly independent. Figuratively, consolidation results from pouring liquid which has been in separate glasses into a single container. The container into which the liquid is poured may be one of the previously used glasses or it may be a new one. When one of the combining companies acquires the assets and liabilities of the others, the combination is known as a merger. With an amalgamation, on the other hand, the combining concerns are welded into a new company. The physical property generally remains in its original location, but the ownership of it passes to the newly created concern, usually a corporation. Stockholders of the combining companies exchange their shares in these companies for those of the consolidated corporation, and the legal existence of the combining companies comes to an end. In this manner the New York Central Railroad Company combined the New York Central and Hudson River Railroad Company and the Lake Shore and Michigan Southern Railroad Company. Either mergers or amalgamations can be used rather easily in combining personally owned enterprises (individual proprietorships and partnerships), but not with corporations. The law of the particular state in which a corporation is created determines whether it may be consolidated or must remain an independent enterprise. In the second place, the consent of the stockholders must be obtained before corporations can consolidate. This has often proved a stumbling-block, as with the proposed merger of the Youngstown Sheet and Tube Company with the Bethlehem Steel Company.

(c) *Holding Companies.* The most important means of ex-

ternal expansion on a large scale occurs with the use of holding companies. Such companies are generally corporations whose charter gives them authority to own and hold stock of other corporations. The purpose of acquiring such stock is to exercise voting control over the concerns in which the holding company has invested. The popularity of holding or controlling companies is accounted for by the difficulties encountered in consolidations and partly by the relatively small investment by which desired expansion of control may be acquired. In some cases the concerns are "pure" holding companies. Purity does not refer to any economic morality but to the fact that the sole purpose of the company is to hold the securities of other companies and thereby control their policies. The Public Service Corporation of New Jersey is such a company, controlling some thirty subsidiary concerns. In other cases a holding company actually owns productive facilities and operates them in addition to the control it exercises over other companies through stock ownership. Such organizations are designated as "operating" holding companies. Not infrequently a corporation takes the initiative in creating other corporations, in which case the former is known as a "parent" company. Thus the United Cigar Stores Company was responsible for the creation of the United Stores Realty Corporation, through which leases were arranged for properties used by the parent company. Similarly, the Pennsylvania Railroad was responsible for the creation of the Greyhound Bus Lines Company. This organization furnishes types of transportation which the parent company's charter did not permit it to perform.

By a pyramiding process, it is quite possible for a holding company to be many corporate steps away from the operating companies and still control them. First-degree holding companies are those which actually own the stock by which they control the policies of operating companies. Such holding companies in turn may be brought under the control of another or second-degree holding company. This company does not own stock in the operating companies but is able to control them

through the stock it owns in the holding companies which do own stock in the operating companies. But a group of second-degree holding companies may in turn be brought under control of a third-degree holding company, and a group of these in turn may be controlled by a fourth-degree holding company, and so on. In this way a single master holding company may control an economic empire such as that referred to by Senator Norris in 1935. He observed that the city of Portland, Maine, is served by the Cumberland Power and Light Company. This concern is owned by the New England Finance and Investment Company, which is owned by the New England Public Service Company, which is owned by the Corporation Securities Company and the Insull Utilities Company, both of which are owned by the Insull family. If instead of tracing a twig down to the trunk, the opposite is done and the trunk is traced to its branches, the Insull interests control two superholding companies, two holding, and twenty-seven subsidiary companies which in turn control 253 operating companies among which 67 other operating companies were owned. Thus the Insull interests, according to Senator Norris, extended their influence over 3,588,000 consumers in 5931 communities in 32 states.<sup>1</sup>

Moreover, through pyramiding of holding companies and other devices a ridiculously small investment may become the basis for tremendous economic power. The investment in a holding company by those who control it may be on a fraction of 1 per cent of the total capital investment in the operating companies. An investment of \$1200 was sufficient for twelve men, who organized the Detroit Bankers Company, to control that holding company and through it control 60 per cent of the banking resources of Detroit. This aspect will be considered in a later chapter.

*Specialized vs. Diversified Expansion.* The expansion of activities by which additional units are brought under centralized control may occur along highly specialized or along rather diversified lines. In the former case the expansion is

<sup>1</sup> Reported in *New Republic*, June 26, 1935.

often referred to as being horizontal in contrast to either vertical or complementary in the latter.

(a) *Horizontal Expansion.* When a concern extends its operations through additional units performing the same type of activity, the expansion may be said to be horizontal. This occurs when banks, insurance companies, and brokerage houses establish branches, and when telephone companies establish additional exchanges. The most prominent horizontal expansion occurs with chains of stores, theaters, restaurants, and hotels. With expansion of this type there may be legal difficulties if the expansion is of an external character. A single concern, such as Woolworth's, can establish as many units of its own as it sees fit without legal interference. But when the expansion involves the combining of formerly competing enterprises there may be legal hindrances. Thus the Ward Baking Company was restrained from combining a group of baking companies on the ground that such action would tend to restrict competition. So long as consolidations do not operate to restrain the freedom of trade, they are lawful.

(b) *Vertical Expansion.* Every enterprise has need for sources of supply and also outlets for its goods. To meet these needs enterprises expand their control backward to sources of supply and forward to outlets. In some cases expansion may occur in only one direction, as when hat manufacturers acquire retail stores, or a retail grocery chain acquires canneries. In addition to horizontal expansion, the International Paper Company, in acquiring additional paper mills, has expanded backward to ownership of timberland and conduct of logging operations, and has expanded forward in acquiring newspapers and periodicals which furnish a market for some of its final products. Some combinations are formed primarily to bring a source of supply and an outlet together. The merger of the American Brass Company with the Anaconda Copper Mining Company is an illustration of this type. Anaconda had the raw materials and American Brass the facilities for fabricating them.

(c) *Complementary Expansion.* Complementary expansion

is a type which is comparatively recent in origin, but may become the dominant type of the future. The underlying idea is to extend activities to groups of products or services which can be handled advantageously as a group. An illustration of this type is the General Foods Corporation. The nucleus of this company was the Postum Company, which engaged only in the cereal business. Into this amalgamation have come such well-known products of formerly independent concerns as Jello, Swansdown Cake Flour, Walter Baker Chocolate, Log Cabin Syrup, Maxwell House Coffee, La France Starch, and Diamond Salt. Among the early combinations of this kind was the International Business Machines Company, which brought together four non-competing lines and has since added others, so that it is now prepared to furnish a variety of calculating and mechanical control devices. This concern, together with two other combinations, Remington-Rand, Inc., and the Underwood, Elliott-Fisher Company, virtually dominate the field of office equipment.

#### B. REASONS FOR EXPANSION

Expectation of private gain is the dominating incentive of most private enterprises, and exerts no less influence on their expansion than on their original formation. In order to understand the development of modern large-scale enterprises in general, however, it is necessary to notice the circumstances under which expansion enables gains to arise, and also the parties who are likely to benefit most directly and perhaps most immediately by the expansion.

*Direct Beneficiaries.* The leading groups which are generally in a position to gain directly by expansion are investors, management, promoters, and bankers.

(a) *Investors.* Traditionally, enterprises were expanded in response to the prospective gain to their owners. Moreover, it was the owners who made the decisions with respect to expansion. This is still true with individual proprietorships and partnerships, which are generally small-scale undertakings. Even with some large corporate enterprises, whose stock is

held by a family or other closely allied group, the decisions are made by those who are practically, if not technically, the owners, and they make the decisions with a view to benefiting themselves as investors. But with corporations in which the general public invests, the situation is likely to be different. Here decisions as to expansion are made by the management with perhaps a routine approval by the shareholders. Most of them presume that any expansion of activity is undertaken primarily for their benefit as owners of shares in the enterprises. With large-scale enterprises this presumption is often unwarranted. In any event the only means by which shareholders can benefit is through larger dividends or through higher market value of their securities than would be possible without the expansion.

(b) *Management.* In large-scale enterprises involving heavy investment by the general public, such as the United Steel Corporation and the American Telephone and Telegraph Company, there is likely to be a wider gulf between the interests of management and of investors than is generally supposed to exist. Not infrequently the action of management is prompted by its own interests rather than those of investors, to say nothing of labor and the consuming public. Despite the fact that there are ways in which management can benefit at the expense of investors without their knowing it, there has been extreme reluctance on the part of management to disclose the benefits it derives from the enterprise even to the shareholders. When the extent to which benefits are received is at times disclosed under compulsion, the reason for the reluctance is easily understood.

Salary is one way in which corporate earnings may be drained under the cloak of production costs. Although it be granted that the "laborer is worthy of his hire," yet excessive executive salaries are particularly likely to arise because the labor market for executives is not as competitive as is the case with the rank and file of workers. If keenly competitive conditions existed there is reason to doubt that salaries of even \$100,000 to \$250,000 would be as numerous among some of the

large enterprises as has been and still is the case. In some instances the amounts are greater. Thus Adolph Zukor and Jesse Lasky, as president and vice-president respectively of the Paramount Publix Corporation in 1929, each received \$887,500, while the sales manager received \$710,000.<sup>1</sup> In addition to the fact that salaries are extremely large in some cases, the amount is often maintained or even increased when a concern is about to fail, or when wages are being reduced and stockholders are receiving no dividends. Between 1929 and 1932, when incomes generally were declining and the general safety of insurance companies was highly uncertain, the salaries of presidents of some large life insurance companies were increasing.

Bonus payments are a somewhat more fruitful source of management gains, and one which stimulates expansion. One of the most famous bonus arrangements of the past was that of the Bethlehem Steel Company. During a period of years a group of from twelve to twenty insiders, sometimes called "the Stars of Bethlehem," received about \$30,000,000 while common stockholders received only \$40,000,000. During four of these years the common stockholders received nothing while the managerial group distributed about \$7,000,000 among themselves. The most liberally treated of these executives was Eugene Grace, who, with a salary of \$12,000 in 1929, received a bonus of \$1,600,000.<sup>2</sup> It is reported that through bonus plans the General Motors Corporation made millionaires of eighty executives within seven years. By a 5 per cent bonus on net profits the executives acquired over 4,000,000 shares of the company's stock valued at \$190,000,000. At times stockholders have rebelled at a bonus arrangement when it came to light and have forced modifications in it, as with that of Bethlehem Steel. In other cases stockholders have carried, or have threatened to carry, the issue to the courts and have forced the abandonment of the arrangement, as with that by which a president of the American Woolen Company was to get \$100,000 and a bonus of from 4 to 6 per cent on all net earnings over \$2,000,000. His predecessor, however, received \$1,200,000

<sup>1</sup> *New York Times*, February 27, 1934.

<sup>2</sup> *Ibid.*

annually plus the right to charge his income tax to the corporation.<sup>1</sup>

Options have also been used in compensating management and often serve to stimulate expansion. This arrangement provides that regardless of the market value of the company's stock, executives may buy designated amounts during a stated interval at previously arranged prices. If the market price of the stock rises for any reason, the executives are in a position to reap gains by exercising their option. They can purchase at the option price and sell at the higher market price. Such a method of compensation was employed, for example, by Montgomery, Ward and Company when in 1933 its president was given a salary of \$100,000, and as an additional inducement to take the office he was given an option to buy 100,000 shares of the company's common stock at \$11 a share.

Salary, bonus, and option may all be used at one time. An instance of this occurred with the compensation of the American Tobacco Company to its president, George Hill. In 1930, with a salary of \$168,000, he received a "special cash credit" of \$270,000, a cash bonus of \$840,000, and an allotment of 13,400 shares of common B class stock. (The allotment price was \$25 a share with a market price at the time of \$112.) Following court action the right to stock allotment was abandoned.

Management fees may also furnish a strong stimulus to expansion from which investors may or may not benefit. For a number of years the Philadelphia Rapid Transit Company was managed by Mitten Management, Inc., to which a management fee was paid. Under the influence of Mitten, a desperate effort was made to monopolize the public transportation facilities of the city, including trolleys, buses, and taxicabs.

Finally, there are miscellaneous circumstances which prompt management to attempt expansion. Among these are pride and a mania for expansion. Such appears to have caused the downfall of the Studebaker automobile company under the management of A. R. Erskine. When the industry was experi-

<sup>1</sup> *Fortune*, June, 1935.

encing a setback, Erskine either would not or could not think in any other terms than expansion. To this end he sought to carry his investing public with him, and increasing dividends were declared which earnings did not warrant. Between 1929 and the insolvency of the concern in 1933, dividends had exceeded net earnings by over \$10,000,000. His last stroke was an attempted combination with the White Motor Company. The arrangements for financing this combination furnish concrete evidence of the way in which the management of one corporation may act contrary to the expressed wishes of its own investors. To acquire control of the White Company, Erskine offered to purchase 90 per cent of its stock. Part of the payment was to be in cash and the balance in stock and notes of the Studebaker Corporation. But the White Company was to furnish the cash with which Erskine might pay the White Company stockholders for their shares. This was to be done by the White Company's declaring an exceptionally large dividend which would benefit the Studebaker Corporation as a very large owner of White Company stock. The plan was rejected by the White stockholders, but Erskine apparently persuaded the White management to help him out of a financial jam by declaring the proposed dividend. This netted the Studebaker Corporation about \$3,000,000 (on stock it had already purchased), which was used by Erskine to meet bank obligations of his concern. Rumor of a second raid on the White surplus for the benefit of the Studebaker Corporation caused White stockholders to threaten legal action for protection of their interests.<sup>1</sup>

(c) *Promoters.* In addition to the inducements which investors and management may have for expansion of their enterprise, there are inducements which center around promoters. Seldom are modern promoters independent individuals or enterprises engaged in the specialized activity of promoting new undertakings. More generally promoters are large investors and executives of other enterprises, together with bankers. An example of this occurs with the Pennroad

<sup>1</sup> *Fortune*, February, 1935.

Corporation, which was promoted by the management of the Pennsylvania Railroad with the aid of the banking house of Kuhn, Loeb and Company. The purpose of the organization was to increase the control of Pennsylvania's management over certain other railroad lines by purchasing stock in these lines. The benefit to promoters may come in different ways depending somewhat upon whether they remain as part of the management or whether the management is turned over to others and they (the promoters) turn to a new venture. In the first case the benefit may come through increased prestige and power, together with opportunities for larger salary, fees, etc. In addition to this are the opportunities to gain through purchasing securities at "ground-floor" prices. This is also one of the likely inducements to promoters who do not remain a part of the management of the concern. Such promoters often derive gain through property which they succeed in selling to the enterprise. Included among such property may be land, buildings, franchises, good-will, and important blocks of stock in other concerns.

(d) *Bankers.* Seldom can expansion on any considerable scale be effected without the aid of bankers. While commercial banks and insurance companies are ordinarily interested primarily in investing funds for the purpose of income, the investment bankers have services to sell on a fee or sliding scale basis. These services, as has been seen, include the underwriting of security issues and providing facilities by which these issues may be sold to the public. For assistance in connection with the formation of the Pennroad Corporation the benefit to the banking house in the form of underwriting fees amounted to \$5,250,000. In some cases the bankers' gain comes at least in part through either gifts of stock or options to purchase it at prices which are likely to prove profitable. Thus the head of the banking house of Dillon, Read, and Company testified that in one transaction before the stock market crash of 1929 his company bought stocks at 20 cents a share which later were sold for an average of between \$55 and \$60 a share. In organizing an investment trust in 1924 his company obtained

stock for \$100,000 which later was valued on the Stock Exchange at \$36,000,000. His concern also received a commission of \$2,000,000 for selling \$50,000,000 worth of stock. Even this record seems to have been exceeded by the brokerage firm which assisted in the flotation of securities for Page and Shaw Candy Company. Here a brokerage firm received \$1,000,000 of the \$2,000,000 paid by the public for securities.

*Sources of Gain.* Aside from such immediate or temporary gains as may be derived by bankers, promoters, and management in the course of expansion itself, there are sources from which future gains are anticipated. No attempt will be made to indicate all the sources from which gains are expected or are actually realized. Particular sources vary considerably as between different lines of business. It is possible, however, to group these sources around three dominating considerations. One of these is the expectation of operating economies or the advantages which may arise in the technical process of large-scale operation. Another is the economies of stabilization, and still another the economies of bargaining power. It will be realized that in a broad sense all these are aspects of operation, but the designations will serve to emphasize essentially different even though overlapping phases.

(a) *Operation.* Technical economies may come through the use of highly specialized machinery which can be used advantageously only with large-scale operations. Not infrequently large sums can be invested profitably in a single piece or set of equipment which performs a single operation. It may be that the equipment reduces costs per unit by a seemingly small amount and yet with a large volume of production the economy abundantly justifies the investment. Moreover, large enterprises are likely to be in a position where they can afford to buy most modern equipment as it comes along. Here again small economies per unit of product may warrant the scrapping of a comparatively new but less efficient piece of equipment for that which is more efficient. There may also be long-run economies in having appreciable sums invested in equipment which is needed only occasionally but which is used to great advantage when needed.

Other economies of a technical character arise through opportunities for better coordination of productive facilities. Through research and experimental work new products are devised and new uses for old ones disclosed by which volume of production is still further increased. Similar facilities serve to provide standards and specifications according to which goods are purchased and work is organized. Smaller concerns can often use one or more pieces of highly specialized equipment advantageously, but are not in a position to coordinate the amounts of various kinds as advantageously as a large concern. It can have various kinds in such proportion that most of the equipment is in rather constant use with normal operation of the plant. Then, too, there are possibilities for better coordination of workers with jobs. Occupational specialization can be carried further not only with the rank and file of employees but also among executives. In bringing about coordination of workers and equipment, higher-grade executives can be employed than could be afforded with a small volume of business. Large staffs of clerical workers and assistants can be employed advantageously in collecting and analyzing data for sound managerial decisions.

Through coordination there are possibilities of either avoiding or eliminating excessive duplication of productive facilities; this is particularly important when expensive equipment is involved. These possibilities are somewhat peculiar in that they exist extensively not only within individual enterprises but also between them. It was this latter aspect which prompted the formation of the United States Steel Corporation at the turn of the century. J. P. Morgan feared that an established balance in the industry would be destroyed by some manufacturers of raw steel extending their facilities into the fabrication of steel while some fabricators threatened to extend their facilities to the manufacture of the raw product. To avoid cut-throat competition which would result from excessive duplication of facilities, the United States Steel Corporation was formed as a holding company to acquire control over these concerns and thereby coordinate their facilities. Not infre-

quently the opportunities of eliminating existing duplications and thus reducing costs in relation to selling prices are dominating considerations. In the formation of the previously mentioned General Foods Corporation, or its competitor Standard Brands, Inc., there was considerable elimination of duplicating merchandising facilities. This element was also present in the acquiring of Shredded Wheat by the National Biscuit Company. Unnecessary duplication of advertising is avoided and advertising mediums can be utilized which would not be feasible with small enterprises.

(b) *Stabilization.* Closely allied with the coordination of activities as a means of reducing costs, the gains of expansion may come through the stabilizing influence of diverse activities. In discussing specialization in a previous chapter attention was called to the influence of instability as a limiting factor. Many concerns are giving increasing attention to means by which they can advantageously specialize within a range of activities which will permit greater stability in operations and thereby greater stability of earnings. To this end concerns expand especially along the vertical and complementary lines previously mentioned. By going back to sources of raw materials, manufacturers are less likely to experience disrupted supplies of them. Thus oil refineries acquire oil lands in various parts of the world and tire manufacturers acquire rubber plantations. By expanding in the direction of market outlets there are also possibilities of avoiding certain types of disruption. The McKesson and Robbins Company, manufacturers of drugs and proprietary preparations, found that it could no longer satisfactorily distribute its 40,000 products through independent wholesalers in the face of chain drugstores, and therefore acquired over sixty wholesale drug houses in as many cities, through which special services were extended to 35,000 retail druggists. Besides expansion backward to sources of supply and forward to market outlets, the General Motors Corporation has not only developed complementary expansion which includes various classes of cars, but has announced its intention to diversify further along "natural" lines. It has financial

interests in aviation through the Eastern Air Transportation and the General Aviation Manufacturing Corporations, in the manufacture of electrical refrigerators through the Frigidaire Company, and in the oil industry through the Ethylene Gasoline Corporation.

(c) *Bargaining.* In addition to the operating economies there are likely to be many opportunities for large-scale enterprises to gain through their bargaining power in the course of trade. On the buying side they are able to purchase in such large quantities that the prices they pay may be considerably lower than for smaller enterprises. Within limits, lower prices may be quite justified by the reduction in costs which producers experience in furnishing them with goods. But in addition to such price reductions there are likely to be further concessions by virtue of the power which large concerns can often exercise over the smaller ones from whom they buy. Chain-store enterprises have been subject to much criticism because of the hard bargains they are often in a position to drive with smaller concerns. These enterprises, however, are not alone in this respect. In dealing with labor, large concerns are likely to be in a much stronger position to take advantage of the workers than the workers are to take advantage of the employer.

On the selling side there are different lines along which large-scale enterprises exert their influence. Under some circumstances the most advantageous course may seem to be the stabilizing of selling prices for their goods in which event their influence operates in this direction. Unquestionably the activities of the United States Steel Corporation served for years to stabilize prices in that industry, even though the stabilization may have been at excessively high price levels and may have created instability in other directions both within and outside the industry. Under other circumstances greatest opportunities for gain seem to lie not so much in the direction of stabilizing an existing high level of prices as in driving prices to higher levels. Under still other circumstances the influence of large-scale enterprises has been exerted to reduce prices

and thereby increase the volume of sales. Many large enterprises have sought to justify the hard bargains they drive in their buying of goods on the ground that only thereby can they offer their goods at low prices. Whether or not this is in reality justification for hard bargains, the fact remains that some enterprises have sought to obtain the benefits of large-scale operation by a small margin of gain per unit on a tremendously large volume of sales. The meat packers have persistently claimed their profits to be only a fraction of a cent per pound of meat sold. Whatever the profit margin may be in the automobile industry, Henry Ford's early leadership developed on a policy of gains through lower prices and larger volume.

### C. LIMITATIONS TO EXPANSION

Despite the widely heralded advantages of large-scale enterprises, there are limits beyond which largeness ceases to be beneficial even to those seeking private gain from the conduct of the enterprises. This does not mean that enterprises may not expand beyond these limits. There may be failure to realize the existence of the limitations or there may be optimism which unduly minimizes their importance with the result that losses take the place of expected gains.

*Operation.* One of the chief justifications of large-scale enterprises from the standpoint of society as a whole is the possibility for more efficient and lower cost operation. But economies in operation are often more difficult to attain than appears on the surface. The fact that such enterprises are financially able to purchase expensive equipment with high potential efficiency does not mean that the aggregate per unit cost of operation will be low. In addition to the difficulties which arise through unavoidable instability of operation there are those of coordination in which management and workers play an important part. The larger an enterprise becomes the more difficult becomes the managerial task of coordination. There are comparatively few individuals with the combination of qualities necessary to direct the management of large-scale

enterprises. To a large degree the requirements have shifted from the possession of much technical knowledge concerning the enterprise to the capacity and training with which to comprehend the significance of figures and graphs furnished by accounting and other reporting agencies. Along with the inevitable limitations of human ability the very size of these enterprises contributes to wastes which are difficult and expensive to eliminate. Within the management group vested interests develop which are guarded jealously. These give rise to frictions which interfere with the effective coordination of all branches and departments of the enterprise. There are also highly impersonal relations between workers and management. Not infrequently their interests conflict sharply. This contributes to friction and labor troubles, with abundant opportunities for costly conflict and numerous small wastes which mount rapidly in aggregate importance as enterprises expand in size.

*Stabilization.* Most of the opportunity for economies through heavy investment in expensive specialized equipment can be realized only when the facilities are utilized rather intensively during their economic life. The same equipment which gives rise to extremely low per unit cost when operations are sustained on a high level gives rise to excessively high per unit costs when operations fall to a low level. In periods of general depression, or when substitute products cut into established trade, the same equipment usually is not suitable for use in making such other goods as may have a ready market. Even if funds are available for the installation of new equipment, months may be required to retool plants, order supplies, and reorganize operations. During the readjustment expenses are likely to exceed income by a considerable margin, to say nothing of the losses sustained on discarded equipment.

In the attempt to create more stable operating conditions for themselves by diversifying activities, sooner or later two experiences are encountered. One is that some of the benefits of specialization are being sacrificed. Managerial effort is being

too widely dissipated for effective coordination and supervision. Unless expansion is halted by financial difficulties, a point is likely to be reached where there is internal reorganization with decentralization of active management. The major parts of the enterprise become relatively independent operating units. Especially when these units are separate corporations their policies are likely to be determined largely by those persons in direct charge of each unit. Between the units there may be active competition for business, as is the case with the branches of General Motors which manufacture automobiles but which specialize in making cars within certain price ranges such as Chevrolet, Pontiac, Oldsmobile, and Buick. While the management of each unit is responsible for the conduct of that unit, there is some coordination between them. Either in fact or in effect the units are subsidiaries of a holding company. Matters of broad policy are determined by the officials of the holding company. This organization may also provide certain services for its units, such as the handling of advertising, the furnishing of technical advice, or the provision of a common sales organization. If these services are not performed directly by the holding company a specialized unit may be created as a service agency. Through decentralization of this kind there are opportunities for such broad diversification of activities as will contribute to more stable net income for the holding company, even though there continues to be instability in the operation and earnings of individual units.

The other condition which large-scale enterprises inevitably encounter in attempting to stabilize their own activities by diversification is that stability for individual enterprises is impossible in an unstable world. The forces generating instability are beyond the control of any concern, however large it may be. Sources of supply may be controlled and marketing facilities established at the very door of consumers, but unless there is sustained buying of goods there cannot be stability in productive operations. When concerns combine so that some serve as markets for others, a closed circle is not created. The marketing agency merely serves as a buffer but has no

automatic power to generate prosperity. Through its contact with customers it can only transmit to its associated companies or units such prosperity as exists in the outside world. As the size of enterprises increases, however, the concerns can contribute more heavily to general instability by following practices and policies designed to benefit only themselves. Much of the stability of which the steel industry boasts has been possible only by creating instability for other industries and in other directions. In short, no private concern can live unto itself alone, despite the vastness of its activities when it is producing goods for sale to customers over whom it has no control.

*Bargaining.* While expansion of activities has often been prompted by opportunities for gain through the exercise of greater bargaining power, this foundation has been much overrated except where the bargaining power could be employed to obtain advantages at the expense of others. Large-scale buying can unquestionably make possible more economical production of many goods purchased in this way. But limits to legitimate gain are reached when the enterprises have derived the benefits of such economies as their large buying makes possible. In borrowing funds there are comparatively small opportunities for legitimate gain. In hiring labor no concessions are justified by virtue of the fact that large numbers are employed. Even when the bargaining power of an enterprise is used at the expense of customers, workers, and other concerns from which it buys, limits are encountered. These will be considered in the following chapter, in which attention is given to the preservation of competition and the limitations to the exercise of monopoly power.

#### QUESTIONS

1. When the size of enterprises is judged by the volume of business what are the principal means by which the volume can be measured?
2. How, besides by volume of business, can the size of enterprises be measured?
3. "Significant differences in size are often comparative rather than absolute." What is meant by this statement?

4. "The possibilities for multiple unit expansion are frequently much greater than for single unit expansion." Explain.
5. What is meant by external expansion, and how may it occur?
6. What difficulties are likely to be encountered with external expansion which do not arise with internal expansion?
7. In what ways may enterprises be consolidated?
8. "The holding company provides a means for avoiding the difficulties encountered in consolidations." Explain.
9. Under what circumstances may horizontal expansion encounter legal hindrances?
10. Distinguish between vertical and complementary expansion.
11. What other groups besides investors may be the direct beneficiaries of an expansion in the size of enterprises?
12. Point out how management stands to gain by the creation of large enterprises.
13. In what ways do large enterprises offer opportunities for economies in operation?
14. Indicate some of the ways in which large concerns can stabilize their activities.
15. What is meant by bargaining as a source of gain to large enterprises?
16. What is the chief justification of large enterprises from the standpoint of society as a whole?
17. "Economics in operation are often more difficult to attain than appears on the surface." What is meant by this statement?
18. Why is the stabilization of operations so extremely important to most large concerns?
19. "Size does not necessarily contribute to greater stabilization." Explain.
20. What are the limits within which legitimate gains may be derived by bargaining on the part of large enterprises?

## CHAPTER X

# COMPETITION, COOPERATION, AND MONOPOLY

THE arrangements by which productive activities are at present conducted in the United States fall into any one or more of three groups. Some are distinctly competitive, others are deliberately cooperative, and still others are definitely monopolistic.

### I. COMPETITION

Competition is the most highly individualistic arrangement by which goods are created and exchanged. In an earlier chapter it has already been seen that the traditional *laissez-faire* policy of the government toward business relied on the self-interest of individuals as a means of directing and coordinating business relations. Producers were expected to be guided by their individual self-interests in furnishing goods, and likewise consumers in purchasing the goods offered for sale. Rivalry among producers for trade with consumers protected the latter from exploitation by the former, and rivalry among the consumers for the goods of producers protected the producers from exploitation by the consumers. Competition was considered to be the life of trade and was relied upon to serve as a balance wheel in the economic mechanism.

#### A. TYPES OF COMPETITION

The rivalry which results from persons seeking their self-interests has come, in the course of time, to manifest itself through such varied mediums as price, quantity, quality, area, and diverse groups.

*Price.* The oldest and still most powerful type of competi-

tion is that of price, or the amount of money given or received in exchange for goods. Competitive prices will be considered separately in a later chapter; for present purposes, it is sufficient to notice that such prices tend to be uniform at any given time in a market for the same quantity and quality of goods. It does not follow, however, as some people assume, that uniform prices are competitive prices. There may be, for example, agreement among competitors as to prices so that uniformity thereof prevails, but the agreement automatically eliminates price competition.

*Quantity.* Whether or not there are agreements or other established arrangements as to prices, there may be competition on a quantity basis. A five-and-ten-cent store may always sell a bag of a certain kind of candy at ten cents, but at one time the amount of candy may be twelve ounces and at another time only eight. If a larger quantity is purchased for the same amount of money, this is equivalent to a lower price per unit of goods, and a smaller quantity for the same money is equivalent to a higher price per unit. A similar situation develops when, in wholesale trade, a dozen may be the standard dozen of twelve units, or may exceed the famous "baker's dozen." Bath salts have been sold to druggists on the basis of thirteen packs to the dozen, aspirin sixteen, and bandages on the basis of four dozen free with every four dozen purchased, which is equivalent to a trading dozen of twenty-four units. In some instances quantity competition takes the form of making the quantity appear larger than it really is. Toilet preparations and other products, such as vanilla extract, may be sold in large bottles with such shape or thickness of glass as will distort the quantity of the contents. In serving some beverages, such as root beer, a seemingly large quantity may be served for a small price, whereas most of the beverage is foam.

*Quality.* Competition may rest in whole or in part on quality. A clothing house which adopts a single price for its suits, say, \$19.75, and adheres to that price, may meet changes in market conditions by offering better or poorer quality at one time than at another. But quality is the most elusive type of

competition. Customers can compare prices and quantities with ease. If at the same price one suit of clothing has a single pair of trousers and another suit has two pairs, the prospective purchaser is instantly conscious that the quantity of goods collectively known as a suit is not the same. He is not, however, in a position to know whether the two suits are the same or different quality products unless he has considerable knowledge of materials and their fabrication.

Largely because customers, and especially ultimate consumers, are so seldom in a position to judge quality, they are likely to rely on price to indicate the quality of goods they are buying. Higher-priced goods are assumed to be correspondingly higher in quality than lower-priced merchandise. Salesmen stress this point in such remarks to customers as: "Of course the higher price means better quality"; "You can't get quality at a low price"; or, "You get only the quality for which you pay." Despite these "sales lines" and the assumption of customers, price is not a dependable guide to quality. There is a general tendency for higher quality goods to sell for more than lower quality commodities and services, but in any particular instance this tendency may not and often does not hold. More frequently than many customers realize better quality goods can be purchased at the same price, or even a lower price, than goods which are thought to be high quality because they are extensively advertised.

The elusiveness of quality is great enough at best, but in many lines it is greater than it need be. Genuine quality competition can exist only when there are recognized standards according to which goods can be graded and on the basis of which they are purchased and sold. Such standards have long formed the basis of trading on the organized produce exchanges. The most conspicuous lack of standards by which customers can be guided in their buying occurs in the retail field. Business concerns are in a better position ordinarily to buy according to specifications than are ultimate consumers. In addition to such real differences in quality as may exist, merchandising and advertising pressure have added many others that are

imaginary and which often provide handsome gains for the sellers because buyers have no means of judging quality.

*Among Economic Areas.* The lines of separation between economic areas seldom correspond with their political lines whether the areas be nations, states, counties, cities, towns, or villages. That there were financial areas which cut across states was definitely recognized in the creation of the twelve Federal Reserve districts previously mentioned. With modern facilities of transportation and communication, including advertising, each local trading area is linked more or less closely to adjoining areas, so that there is a vast competitive network. Every city and town draws some trade from the surrounding territory, hence its competitive influence extends beyond its own borders. As one leaves a center of retail trade and moves in any direction the commercial pull of that center declines and that of the center being approached increases. Thus each community exerts competitive influences on others and they in turn generate influences which affect it. If goods of any kind are higher in price in one community than in another by more than the costs of transportation and communication there will be a tendency for buyers to seek the lower price area, and if goods can be moved from one area to another they will tend to flow away from the area of low prices to the area of higher prices. These shifts tend to establish competitive balances between areas, as has already been noticed in the case of international trade.

*Among Diverse Groups.* At one time competition was thought of as only the rivalry between those enterprises engaged in the same lines of business. Often in a community a shoe dealer, for instance, would not belong to the same fraternal bodies or church as his rivals. He was quite willing to be intimate with grocers, druggists, clothiers, etc. These he did not conceive as business rivals. It is true that they were not seeking to sell the same thing he was seeking to sell. But they too were striving to get consumers' dollars in exchange for their goods. At any given time the dollars which one merchant got the others could not get. Consequently they

were competitors even though not considered as such. The same situation existed among manufacturers and other specialized groups. But in time the situation changed somewhat, especially under the influence of high-pressure advertising. Efforts were made to create "consumer consciousness" for particular goods. Individual enterprises began deliberately to offer their products as substitutes for others of an entirely different kind. Thus the manufacturers of Lucky Strike cigarettes made a direct attack on the candy industry by advertising: "Reach for a Lucky instead of a Sweet." Concerns engaged in similar lines began to realize that much of their advertising and sales pressure was serving merely to seesaw a substantially fixed amount of business back and forth among themselves. One after another they attempted to find new uses for their goods whereby they might conquer new territory. Recent instances of this form of competition are exemplified in the attack of the paper manufacturers on the glass bottle industry, by seeking to substitute paper cartons for milk bottles, and of the tin industry by seeking to displace glass with tin beer containers. In some instances advertising has been undertaken by industrial groups such as the citrus fruit growers. Other industrial groups which were reported to be undertaking extensive publicity campaigns in 1936 are the National Association of Ice Industries, the National Association of Petroleum Retailers, the American Gas Association, the Cheesemakers' Publicity Association, and the Carpet Manufacturers of America. Each of these groups is definitely in conflict with other groups also seeking to attract consumers' dollars.

#### B. PROTECTION OF COMPETITION

Rivalry in the process of trade has been considered so vital to the economic protection of individuals and groups from exploitation under a policy of *laissez faire* that legal pressure has been exerted to keep the channels of trade open for the operation of competitive forces. To this end various legislation has been enacted of which the Sherman, Clayton, and

Federal Trade Commission Acts are illustrative and the most generally significant.

*Sherman Act.* During the Middle Ages legal pressure was exerted against conspiracies and contracts in restraint of trade. Under the common law conspiracies in restraint of trade were illegal and punishable at times even by death, but contracts which served to restrain trade were not illegal. They were merely unenforceable at law. The principles of common law were employed in this country for a number of years in dealing with efforts to create monopolies. But as trade grew in extent and complexity a variety of practices developed which were not provided for satisfactorily under common law. Then, too, large enterprises developed, and they were in a position to dominate business in ways not contemplated under common law. For instance, the Standard Oil Trust was so powerful at one time that it compelled railroads to agree to give it rebates not only on its own traffic but also on that of its competitors. There came to be a substantial wave of feeling against large business enterprises and their practices. This led to the passage by Congress in 1890 of the Sherman Act, the purpose of which was "to protect trade and commerce from unlawful combinations and monopolies." That the wave of feeling at the time was substantial is suggested by the fact that this Act was passed by a vote of 52 to 1 in the Senate and by 242 to 0 in the House.

Under this initial federal effort to preserve competition, "every contract, combination, or conspiracy in restraint of trade or commerce among the several states or with foreign countries" was declared illegal. As will presently be seen, the United States Supreme Court later decided that the Act did not mean to include "every" contract or combination which restrained trade even though it said so very definitely. Penalties were provided both to punish violators and to redress injured parties. Every violator was subject to fine or imprisonment or both. If the violation injured the business or property of any other person, the injured party could sue the violator, and if the injury was proved, the party sustaining it was en-

titled to recover three times the amount of the damage and also to collect the cost of prosecution, including attorneys' fees. Thus agreements which at common law were unenforceable were now positively illegal and criminal in character, and penalties were intended to be severe.

*Clayton Act.* In the course of nearly fifteen years' experience with the Sherman Act, including the court interpretations of it, there had come to be a feeling that in many respects its bark was worse than its bite. Several large combinations had been ordered dissolved, including the Standard Oil and American Tobacco Companies, but the dissolutions were more in name and appearance than in fact. Then, too, the courts had unexpectedly applied the Act to labor unions, thus arousing the antagonism of labor to it. Supplementary legislation was embodied in the Clayton Act of 1914.

Aside from exempting labor unions as combinations in restraint of trade, the Act dealt with four major practices which operated to curtail competition. One was price discriminations. These were declared illegal when they operated either directly or indirectly substantially to lessen competition. Price variations were permitted, however, for differences in quantity, quality, or costs of handling orders. Restrictive sales and leases, commonly known as tying contracts, were forbidden. This struck at large concerns which made price concessions to dealers who agreed not to handle competing lines, and also at such practices as those of the United Shoe Machinery Company by which it leased patented equipment to shoe manufacturers on the condition that the manufacturers would agree to use other machinery furnished by it. A halt was also called on the combination of competing concerns by means of holding companies. These companies were forbidden to acquire stock of enterprises where the effect of the acquisition would be to lessen competition substantially. A curb was also placed on interlocking directorates. By having the same persons serve as directors of numerous large enterprises in the same line of business, a uniformity of policy often developed among the enterprises which served to impair competition. The Act

restricted the number of large enterprises of a competitive or similar nature in which an individual could serve as director.

*Federal Trade Commission Act.* When the railroads were subjected to regulation under the Interstate Commerce Act of 1887, there was created an Interstate Commerce Commission charged with administering the Act, but no special body was created for the administration of the Sherman Act. There was a growing feeling that the maintaining of competition required a special administrative body which would operate largely to prevent unfair practices and developments without exercising continuous supervision over enterprises, as had been done by the Interstate Commerce Commission in the case of railroads. Along with the Clayton Act, the Federal Trade Commission Act was passed. The latter Act did not declare any specific practices illegal, but made a sweeping declaration that any unfair methods of competition were unlawful, and a special body known as the Federal Trade Commission was created. This commission was empowered to prevent persons, partnerships, or corporations from using unfair methods of competition, except in the case of railroads, which were subject to the Interstate Commerce Commission, and the banks, which were subject to the Federal Reserve Board.

## II. COOPERATION

It has already been observed that interdependence develops with specialization and requires cooperation or coordination of diverse groups. The cooperation may be enforced by the conditions of the market or may be voluntary and deliberate in nature. The principal voluntary forms are trade associations, labor unions, and cooperatives.

### A. TRADE ASSOCIATIONS

Despite the conflicting interests of business enterprises in their quest for the consumers' dollars, there are some points on which the enterprises have common interests. A trade association is an organization formed around these common interests,

which may be many or few. The associations may or may not be corporations. In any event they are non-profit enterprises in the sense that their activities are not conducted with a view to earning a profit for the organization itself. Its activities are conducted for the benefit or profit of the members. Costs of operation are met by either membership dues or special service fees. The former may be a flat amount or be graduated on some basis, but it is usually paid regardless of the extent to which the services of the associations are used, while the service fee is likely to be an additional charge for specialized services levied only on those members to whom the service is furnished.

*Development.* Organizations of this kind have not followed an even course of development. In this country they appear to have begun less than a century ago or around 1850. One of the first permanent bodies was the Hampton County Spinners' Association. Periods of business prosperity have generally stimulated their growth, whereas periods of depression have exerted the opposite influence. Business men are more inclined to cooperative action when business is good than when there is a desperate struggle among competitors to get barely enough business for their individual survival. Following both the Civil and the World Wars, trade associations grew rather rapidly. Never before the National Industrial Recovery Act of 1933 had these associations received such definite encouragement. Nor had they ever before had such a place of significance and power as they possessed for a short time under that Act.

*Scope.* In scope of activity there has been and still is wide variation. The previously mentioned Spinners' Association was limited to a study of technical problems in manufacturing and to the exchange of trade information. Following the Civil War many associations engaged in the regulation of prices. Following the passage of the Sherman Act these activities declined, and efforts were directed more to developing cooperation among the members of a trade or industry with a view to bettering conditions therein. Just before the World War

increasing use was being made of "open price agreements." These provided for the exchange of more confidential information than had ordinarily been made available for exchange. Prices at which goods were sold or at which orders were accepted, together with information as to production, shipments, inventories, and costs, were exchanged through the associations. During the World War they rapidly extended their operations to cooperative activities such as research, developing cost accounting systems, furnishing credit information, directing advertising campaigns, and serving as traffic bureaus. To an increasing extent the associations became the medium for group action in matters of legislation. After the war the Department of Commerce encouraged the collection of trade information through these agencies, and encouraged them in establishing standards which would serve to eliminate much industrial waste. Under the previously mentioned National Industrial Recovery Act, industries were encouraged to become organized through trade associations with a view to formulating codes of fair competition for their operations. If the code submitted met with the approval of the government, it was declared to be the industrial law of the industry and compliance therewith was compulsory.

The trade association has vast possibilities for facilitating or for restricting trade. Not infrequently these associations have run afoul of the law by conducting activities which restrain trade, particularly through the medium of price regulation. They are probably also headed for trouble because of the manner in which many of them exert pressure in conducting their activities. At the same time the trade associations may be utilized effectively as agencies for better coordination of business relations and as representatives of employers in negotiating labor contracts for an entire industry.

#### B. LABOR UNIONS

So long as individuals work for themselves there is no basis for labor union organization. Persons may find themselves poor managers of their own activity, with the result that they

may have to work long hours to obtain a very meager existence. But there is no conflict of interest between themselves as workers and as bosses. When, however, they hire their services to others, their common interests as employees furnish a basis for labor association.

While the association of workers is not new, the labor union as it is generally known is a product of the last few centuries. As trade expanded in the Middle Ages, artisans banded themselves together in craft guilds for mutual protection. At that time the employees of the artisans were mostly apprentices who in their turn would become artisans. Not until workers became more or less permanent employees did the labor union develop. During the colonial and revolutionary periods, virtually all industrial activity in this country was carried on in homes or small shops. Gradually activities were shifted to factories, and industrial towns and cities developed. In the course of this change, workers formed societies for the protection of their interests.

*Craft Unions.* The first form of labor organization centered around the various crafts or trades in which workers, and particularly skilled workers, specialized. Societies or local unions were formed among such craft groups as coach makers, bakers, coal-miners, nailers, glassblowers, hatters, molders, tailors, printers, machinists, cigar-makers, and iron-rollers. In time the individual societies in a trade became allied on a national scale, as with the printers and hat-finishers. Then, too, unions in different crafts began to form associations, as with the Mechanics' Union of Trade Associations. This association was formed in Philadelphia in 1827, and is believed to be the beginning of the American labor movement.

In the period immediately following the Civil War there was considerable disintegration of the organized labor movement, but it revived. Efforts were made to organize on an even larger scale. The first movement attempted in this period was under the leadership of an organization known as the Knights of Labor. This was originally a secret society seeking to unite all labor in a vast cooperative movement to improve

their common good. The organization stressed political pressure in the form of labor legislation rather than economic pressure, although it did conduct some vigorous strikes. At one time it had a large following. The movement was dominated, however, by a type of idealism which failed to realize that whatever common interests labor in general might have, the bonds were not sufficiently strong to solidify unskilled and skilled workers in all lines of work for a successful attack on the existing order of things; and eventually the organization collapsed. The other movement was not interested in the mass of workers but in the skilled trades. With this group skill constituted a strong bond of common interest. Moreover, economic pressure in the form of strikes rather than legislative action was emphasized. On this basis the American Federation of Labor was formed. It provided a means of loose but effective co-ordination of craft unions. The various craft groups retained their autonomy and a high degree of independence in conducting their affairs. In time the Federation came to include a majority of the organized workers, although some strong unions have remained independent, as, for example, the Brotherhood of Locomotive Engineers.

*Industrial Unions.* The craft arrangement would probably have continued to serve the more skilled workers had there not been further developments of specialization. With task specialization, trades and crafts were broken into parts and often parts of different crafts were combined, or at least the same worker performed tasks which were formerly parts of different crafts. This breaking-down of crafts into tasks brought skilled workers into closer competition with unskilled workers than formerly. Through the combining of operations into new occupations increased conflict developed among the unions as to which one had jurisdiction over a particular occupation, and this conflict enabled employers to play one union against the other. These situations called for a new type of labor organization.

To meet the changed conditions under which specialization operated, industrial unions began to develop. These covered

an entire industry, and all workers in that industry, whether skilled or unskilled, became eligible for membership in the union. Two prominent unions of this type are the Amalgamated Clothing Workers and the United Mine Workers. The American Federation of Labor, however, has shown amazing reluctance to modify its structure to meet the conditions which prevail in such large industries as steel, automobile, and tire manufacturing. Under the vigorous leadership of John L. Lewis, president of the United Mine Workers and a former vice-president of the American Federation of Labor, there has been formed a Committee for Industrial Organization to unionize workers in the large-scale industries on an industrial basis. Severe conflict can scarcely be avoided in organizing these industries, and what the outcome will be is uncertain, although a growth of industrial unionism seems inevitable. This is likely to benefit common as well as skilled labor. At the same time there will probably be a split in the ranks of labor, with rivalry developing between the crafts and the industrial groups.

*Company Unions.* For many years employers merely resisted the organization of workers through court action and the discharge of union members. As unionization made headway, some employers sought to prevent the organization of their workers in "outside" unions by encouraging the formation of company unions. These organizations are sometimes known as Employee Representation Plans or as Works Councils. Membership is restricted at least to the employees of a firm, and if the concern has more than one plant there may be separate organizations for each of them. A second spurt of short duration began in 1933 when the National Industrial Recovery Act made collective bargaining compulsory. When this Act was declared unconstitutional the National Labor Relations Act of 1935 was passed for the purpose of encouraging collective bargaining and of destroying company unions. Such unions seldom exist without the active influence of employers and under the new law employers were not only required to bargain collectively with their workers through such organizations as workers might select, but employers were forbidden to aid or to

interfere with any particular form of labor organization. Such legislation coupled with that of a similar character in a number of states and with the aggressive organizing activity of independent unions has apparently doomed the company union as an agency for collective bargaining.

### C. COOPERATIVES

In a broad sense any joint activity is cooperative in nature, and no precise definition of a cooperative is possible. However, certain fairly distinct elements are involved. In the first place, there is a separate organization to conduct the joint activities. When Sears and Roebuck Company arranged to have certain of its products sold by Gimbel Brothers there was joint activity, but not of the type which gives rise to a cooperative organization. In the second place, the organization provides a means by which the members act voluntarily on a collective basis. The element of compulsion which characterizes labor unions does not prevail with a cooperative. In the third place, the cooperative usually provides a means by which the members deal collectively with outside parties; in this respect it differs from some trade associations. An exception occurs here in the case of those cooperatives whose transactions are restricted to the members of the group, as with some arrangements for mutual insurance. In the fourth place, the cooperative is owned by the members, who control its activities, and usually each member has only one vote regardless of his investment in the enterprise. Finally, the members derive their benefits from the organization in proportion to the amount of business transacted through it rather than from periodic distribution of profits in proportion to the investment. Some organizations designate themselves as cooperatives merely because they charge lower prices to customers or share profits with customers on some basis determined by those operating the enterprise. These are not considered. A world survey by the United States Bureau of Labor Statistics indicates that about 1934 there were nearly 500,000 societies of all types, of which about

15,000 were in the United States. Membership in these societies was approximately 140,000,000, somewhat over half of the members were in the Soviet Union and slightly over 4,000,000 in the United States.

There is scarcely any type of organized activity that cannot be performed on a cooperative basis, but some lend themselves more readily to such operation than do others. Among the cooperatives some provide for financing the purchase or the construction of homes, others make loans for various purposes; some provide insurance, others medical attention. But by far the most fertile field is that of buying and selling commodities.

*Consumers or Retail.* Usually the designation "Consumers" is applied to organizations composed of ultimate consumers, through which the consumers buy such things as food, clothing, furniture, and other household equipment, coal, or gasoline. In most cases the organization merely buys at wholesale and sells at retail. The prices charged the members may be lower than at non-cooperative establishments, or they may be the same. If the prevailing commercial prices are charged, the members are given receipts at the time purchases are made and the profits are determined periodically. These are then distributed to members in proportion to the receipts they hold. By this arrangement non-members are enabled to deal with the organization without sharing the monetary benefits of members. At times the cooperative establishes standards according to which it buys or has goods prepared to its order. An instance of this is Cooperative Distributors, Inc., which also publishes a trade magazine known as *Consumers' Defender*. During the depression of 1929 a rapid increase occurred in transactions of consumers' cooperatives, and it is estimated that these amount to about \$1,000,000 a day.

*Wholesale.* With the advent of chain retail stores, independent retailers sought means by which they could match the buying economies of the chain and retain the advantage of individual proprietorship. Grocery-store cooperatives were first formed around 1887. As wholesalers began to realize the loss of business they were likely to sustain through the inroads of

chain enterprises in the retail field, they took the initiative in organizing voluntary retailer-wholesaler chains. The largest of these is reported to be the Independent Grocers' Alliance, with a membership of about 10,000, operating in twenty-seven states.<sup>1</sup> Not infrequently the cooperative furnishes other services, including arrangements for advertising, store displays, and advice on store management. In some cases special brands are created and the cooperative may even own or control the facilities for raising or fabricating products. With some voluntary chains the members' store fronts are painted in standard colors, and standard signs, such as those of the Red and White chain, are used. While wholesale cooperative buying has been practiced mainly by small retail stores, large department stores have also formed organizations through which they pool their purchases for the benefit of even larger-scale and lower-price buying than their individual purchases would permit.

*Agricultural.* The first type of cooperative activity which the government directly encouraged was the marketing of farm products. Lest such cooperatives might meet the fate of labor unions under the Sherman Act, specific provision was made in the Capper-Volstead Act for exempting these organizations as combinations in restraint of trade, unless the Secretary of Agriculture has reason to believe they are actually monopolizing or restraining trade. The Department of Agriculture has actively engaged in advertising the advantages of such organizations and has furnished assistance in the formation of them. Special banking facilities have been created by the government, including the Central Bank for Cooperatives which was organized through the Farm Credit Administration. It is estimated that in 1935 cooperatives marketed about 22 per cent of the farmers' cash products. In the marketing process the cooperatives may conduct a wide variety of activities. One of the largest and most successful cooperatives in the world is the California Fruit Growers' Exchange. Through this organization the picking, grading, packing, and

<sup>1</sup> *Business Week*, May 18, 1932.

loading of fruit is supervised. It has regulated the flow of fruit to the various markets. It maintains research laboratories, owns lumber mills for making boxes, and operates processing plants in which marmalades and other products are made. Efforts are exerted to reduce freight rates, and an advertising campaign has established orange juice as a food for breakfast; millions of dollars have been spent in publicizing its trade name, "Sunkist." Not infrequently cooperatives furnish advice as to the conduct of farms and provide facilities through which farmers may buy feed, fertilizer, and machinery at lower prices than would otherwise be possible.

Although the participation of the Federal Government in the cooperative movement continues to center around its agricultural aspects, the participation has extended in scope. Credit cooperatives have been sponsored; electrification projects undertaken by cooperatives may receive financial assistance through the Rural Electrification Administration, and cooperatives of various kinds have been fostered by the Tennessee Valley Administration even to the extent of creating the Tennessee Valley Associated Cooperatives, Inc., designed "to promote, organize, establish, manage, finance, coordinate and assist in any way whatsoever in the development" of cooperative enterprises through the area in which the Tennessee Valley Authority functions. A federal commission has also been appointed to study cooperatives abroad and to make recommendations with respect to such activities in this country.

### III. MONOPOLY

Despite lip service given to the desirability of competition, loyalty to this method of doing business is superficial and deceptive. When opportunities arise for individuals to avoid or interfere with competition and thereby benefit at the expense of others, there has been little reluctance to do so. There are, however, circumstances under which competition may operate to destroy or impair trade rather than to stimulate it.

## A. BASES OF MONOPOLY POWER

*Secret Circumstances.* One of the most enduring forms of monopoly power comes through secret formulas and processes. Since these are not publicly recorded, they are not easily duplicated, nor are substitutes readily devised. Opportunities of this kind are numerous in the field of chemistry, especially with film companies, who guard jealously the ways in which they employ trick photography. Some secrets are never written for fear of discovery; others are parceled among different persons no one of whom knows the entire secret. In other cases the monopoly power comes through secret agreements and understandings among competitors. Famous in earlier days were the "Gary Dinners." As head of the United States Steel Corporation, Judge Gary held dinners from time to time which were attended by leaders of the steel industry. On these occasions "understandings" were reached on such matters as prices and labor policies. In more recent years there are some indications that secret understandings as to prices also exist between the Big Four in the cigarette industry and among various producing units in the oil industry.

*Location.* Monopolies of location arise mainly in connection with natural resources. For instance, the owner of a corner site in a commercial center is usually in a position to exact more in the lease or sale of the property than could the owner of other sites of the same size in that locality. A small farm may also be in a strategic location when it separates two larger tracts of land neither of which can be utilized most advantageously with the small farm intervening. A natural pass through a mountain may provide a strategic location for the construction of a railroad line and the concern which controls that pass can exact tribute from others who use it and can even prevent their use of it. The United States Government has a monopoly of location with respect to the Panama Canal.

*Unavoidable Limitations of Supply.* While monopolies of location may rest on unavoidable limitations of supply, these limitations are not necessarily dependent on location. Antique furniture, paintings of old masters, rare coins, and stamps are in

a position to command high values because they cannot be duplicated. Similar is the case of limited resources. Regardless of where the resources exist, their limitation enables the owner of them to exact tribute from those who use them. The Aluminum Company of America, for example, owns virtually all the bauxite ore of commercial value in this country, and through its subsidiaries owns the richest bauxite resources throughout the world.

*Size of Organization.* Despite the view of the United States Supreme Court that tremendous size of an enterprise does not in itself operate to restrain trade, there are numerous circumstances under which it does so operate, and these are probably much more numerous than those under which it does not. It is true that the aggregate of small competitors has an important influence on the market, but it is also true that experience has taught small enterprises that while their existence as a group may not be endangered by the giant, their individual existence may be at its mercy. In labor relations size of organizations also furnishes a basis for monopoly power. Among employers, organizations such as the National Metal Trades Association are engaged in a variety of activities on a large scale designed to give individual employers greater bargaining power and control over labor than they would have alone. Among employees, unions do not necessarily confine themselves to obtaining genuinely competitive wages for their members, but use their power to get as much more than this as possible.

*Confidence.* Among the more fragile and uncertain sources of monopoly power is confidence in an enterprise on the part of its customers. Through genuine reliability of service, high quality of goods, or perhaps merely by persistent advertising, a fence comes to be established around customers which serves to hold off competitors. In some cases the fence may be so substantial that customers will not even consider offers of competitors or even inspect their goods. In other cases the obstacle serves mainly to make competitive inroads more difficult.

*Private Grants.* Concessions are a form of privately granted monopoly. These are often granted for the sale of candy,

cigars, and beverages in hotels, theaters, clubs, etc. Not infrequently prices at these concessions may be double or treble the prices elsewhere. Coca-Cola, for example, usually sells at 5 cents a bottle, but under the protection of a concession it may sell for 10, or even 15 cents. Concerns may also select certain dealers or brokers through whom their goods are handled exclusively. This does not mean that these dealers may not handle competing lines. For instance, some drug stores are given the exclusive right to handle "Rexall" products, and customers wanting this brand can get it only through the stores which have been selected as dealers. If a manufacturer wants only his lines of goods carried and sold on such terms as he designates, he must make the dealer his agent.<sup>1</sup> Under such an arrangement the dealer is required to follow the instruction of his principal. Automobiles are among the products distributed on this basis. Ordinarily the terms of the agent's contract are such that there is little opportunity for competition on a selling-price basis among the agents of a concern. Consequently consumers have little opportunity to play one agent against another for price reductions, nor can one dealer charge customers appreciably more than another.

*Government Action.* While the general policy of the government has been to forbid private monopolies and to compel private competition, there have been exceptions to the general rule. In some instances the government has directly created the monopolies; in others it has made them possible by general legislation.

(a) *Patents and Copyrights.* In order to stimulate the development of new ideas, products, and processes, the government grants exclusive privileges known as patents and copyrights. These privileges entitle the accredited originators to the exclusive control of that which they have created for a period of years. Copyrights apply when duplication occurs by printing, as with books and music, whereas patent rights apply when duplication occurs in other ways, as with machin-

<sup>1</sup> Late in 1936 the United States Supreme Court upheld state laws giving manufacturers of trademarked goods the right to establish the retail price of such goods.

ery. Exclusive right to use a distinctive trade name or mark for an indefinite period may also be obtained by the first party to register such insignia of trade.

(b) *Licenses and Franchises.* In some lines of business unrestricted competition may not be conducive to public service and the government may take steps designed to improve the service through curtailing competition. Most restrictions are imposed by means of licenses and franchises. It is in this way that broadcasting stations are permitted to operate on wave lengths assigned to them. Transportation, water, gas, and electric companies generally operate on the basis of franchises. Sometimes these grants of privilege prevent direct competition, while in others they do not, as with the licensing of physicians. In any event they restrict the competitive field to those having been granted licenses or franchises.

(c) *Tariffs.* An important although not usually recognized exception to the general tendency of maintaining unrestricted competition is tariff legislation. For the most part this is definitely intended to restrict rivalry from foreign countries. Only under a limited number of circumstances can barriers serve to stimulate competition. One of the circumstances is to enable infant industries to get a start when domestic resources are favorable for their development. In the absence of protection, foreign supplies might prevent the development of cheaper domestic supplies. Once an industry has been protected it demands a continuation thereof even when it has attained full strength and is able to stand on its own feet in competition with foreign concerns. It was on this infant industry basis that the steel industry was first given protection, and it has remained a protected industry despite its tremendous size and profitability. The prices of liquor have long been held at excessively high levels by virtue of a protective tariff. In most instances there is little, if any, more economic justification for imposing barriers to the competitive flow of goods between nations than there would be for one state to impose barriers to the flow between it and other states. The fact that the Constitution does not permit the latter has

been the only reason it has not developed. More than one effort in that direction has been attempted, only to crash on the rocks of unconstitutionality.

(d) *Combinations.* In two instances the Federal Government has provided directly and deliberately for large-scale combinations. Under the Transportation Act of 1920 the railroads are not merely permitted but are directed to consolidate into a few large systems under the direction of the Interstate Commerce Commission. While there is much need for such combination, the provision for it runs counter to the general tendency with respect to large combinations, even though the Act provided that the Commission should so arrange the systems as to preserve competition "as fully as possible." The other exception makes possible large combinations of concerns engaged in exporting. Under the Webb-Pomerene Act, these combinations were exempted as being in restraint of trade provided their operations do not extend to domestic trade. Among organizations whose operations are thus exempted are the Steel Export Associations of America, Copper Exporters, Inc., and the Northwest Dried Fruit Export Association.

#### B. CONTROL OF MONOPOLY

While there is abundant justification for fear of the power which private monopolies can exert, they are subject to greater control than is sometimes realized. Both governmental influence and economic forces come into play.

*Government Control.* The control of monopolies, as has been previously indicated, is only one aspect of business regulation; the general topic will be considered in a later chapter. At present it is sufficient to notice that the government has two means of dealing with private monopolies. One is to exert regulatory pressure designed either to preserve competition or to curb the possible abuses of those private enterprises which can best serve the public as monopolies. In the event that regulatory pressure is ineffective, there is the alternative of displacing private monopolies with government monopolies.

This step has been proposed from time to time for the railroads, and in 1933 the commercial banks of the country were closer to being nationalized than is generally appreciated. The more highly private control of business activity is concentrated, the more easily can the control be taken over by governmental agencies.

*Economic Forces.* When efforts are made to exercise monopoly power, economic forces come into play which are beyond the control of those seeking to exercise the power. There is always potential competition existing between areas and between goods.

(a) *Competition of Areas.* The fact that market areas are linked together sets limits on the exercise of monopoly power. Even if a single individual owned all the land in a community, he would find his power to obtain high rents restricted by lower rentals prevailing in adjoining territory. Labor leaders have long recognized that the bargaining power of labor in one place is influenced by that in another. The wage which a competitive enterprise can afford to pay is affected by the amount similar concerns in other localities are paying. Consequently unions seek to be national, if not international, in scope. But this does not entirely solve their problem, as will be seen presently. On the other hand, if employers in one locality seek, through agreements or otherwise, to exercise monopoly power in reducing wages or increasing hours, they find workers moving to other localities. For this curb to operate it is not necessary that a large part of the workers go elsewhere but merely a fringe which serves to tighten the labor market. The competition among employers for the remaining workers will serve to raise wages. There are also curbs to the monopoly prices of goods. Differences in prices as between areas are not unusual, but they can ordinarily persist at different levels only if the differences do not furnish sufficient incentive for buyers to shift their purchases of particular goods from the areas in which the prices are higher to those in which the lower prices exist.

(b) *Competition of Goods.* Along with the potential compe-

tition between areas is that between goods. In the first place, ease in obtaining additional quantities of the same or similar goods serves as a check to monopoly power. Throughout most of the retail trade enterprises can be established too easily, and old ones expanded too readily, to permit effective monopoly power in the sale of goods to ultimate consumers. Even when additional quantities of the same or similar goods cannot be easily obtained, they will come forth under sufficient incentive and will in time operate as a check to monopoly. There are always some concerns of considerable size which have facilities for producing diverse goods and they can therefore shift their emphasis rather quickly to a line which shows signs of unusual gain. This shifting, together with the expansion of output on the part of numerous highly specialized and small concerns, may serve to flood the market and break monopoly power. If, however, the circumstances are such that relatively high prices can be maintained rather indefinitely, some new establishments may come into the field even when large investments are required. During 1935, despite much unused capacity in the steel industry, prices remained high and Henry Ford was reported to be planning the establishment of his own steel mills. In some cases a single spurt of high prices has broken a monopoly permanently. At one time Germany was the main source of potash and was in a position to exercise monopoly power. During the World War the prices increased by some 1300 per cent. This stimulated the use of inferior ores and the exploration for new deposits. These have been found in Texas, New Mexico, and some other places, with the result that the United States is no longer dependent on foreign supplies.

Opportunity for substitution of other goods also serves as a curb to monopoly power. At one time Chile had a monopoly of natural nitrates and charged prices which stimulated experimentation with synthetic products, with the ultimate result that synthetic products took the place of natural ones. Synthetic products have also curbed India's rubber monopoly, and the substitution of rayon for silk is well known. Even

patents do not furnish ironclad protection for the exercise of monopoly power. Infringements are frequent and prosecution of alleged infringers is both expensive and time-consuming. Nineteen years were required in a patent suit of the De Forest Radio Company against the Radio Corporation of America. Despite efforts of the Gillette Razor Company to maintain the monopoly power its original patent made possible, the company found itself increasingly unable to curb the inroads of rival products. After some very expensive patent litigation, it undertook to control competition by acquiring its leading competitors. A long-standing monopoly in the manufacture of talking machines was suddenly broken by the advent of radios, many of which in the early days were made in the home.

Labor likewise encounters curbs in the exercise of monopoly power. The ease with which common labor can be recruited prevents the exercise of power which skilled workers, who cannot be recruited so easily, are capable of exerting. But even skilled workers, whether organized on a national or international scale, encounter the curb of substitution. A union may control wage rates but cannot as yet control the volume of employment at those rates. Because of the extremely high rates of pay for plasterers the use of plaster boards is encouraged in the construction of buildings. These boards are made in factories by unskilled workers and can be sawed and nailed into place by anyone who can use a hammer and saw. Then, too, there is substitution when workers in particular jobs are displaced by machines. This aspect will be considered in a later chapter, and need merely be mentioned here to indicate a powerful curb to the exercise of monopoly power by organized groups which are not also in a position to control the installation of machinery.

#### QUESTIONS

1. "While much competition is of the price variety, there are other ways in which rivalry manifests itself." Explain.
2. "Competition on a quality basis is more elusive than on a quantity basis." Is this necessarily so?

3. "Since competitive prices tend to be uniform, it follows that uniform prices are competitive." Is this line of reasoning valid?
4. How, if at all, can competition develop between groups engaged in diverse lines of business?
5. By what means have attempts been made to protect competition?
6. "The Sherman Act was sweeping in its application and drastic in its penalties." Explain.
7. What particular circumstances gave rise to the Clayton Act?
8. "The purpose of the Federal Trade Commission Act was somewhat different from either the Sherman or Clayton Act." Explain.
9. "Trade associations have possibilities for facilitating or for restricting trade." How can the associations exert these diverse influences?
10. How has specialization affected the organization of labor?
11. In what respects did the American Federation of Labor differ from the Knights of Labor?
12. What circumstances have given rise to company unions?
13. Point out some of the ways in which cooperatives differ from other forms of economic organization.
14. "Not all lines of business are equally well suited for cooperative organization." Evaluate this statement.
15. In what ways has the Federal Government encouraged agricultural cooperatives?
16. "The policy of the Federal Government has been consistently against private monopolies of any kind." Is this statement valid? Explain.
17. What are the leading bases on which monopoly power develops?
18. Of the various ways in which monopoly power arises, which do you consider to be the most effective?
19. "Experience has shown that monopolies can be broken without government interference with their activities." Explain.
20. In what ways can the government exert its influence in dealing with private monopolies?

PART THREE



*Factors Controlling  
Production*





## CHAPTER XI

### NATURAL RESOURCES

AGAINST the background of preceding chapters attention will now be turned to the requirements for producing commodities and services. Even though the exact nature of the requirements may differ widely between generations, countries, industries, and even enterprises within the same industry, there are certain broad groups into which these various requirements may be gathered for convenient examination. One of these groups is the resources furnished by nature. Others which will be considered in following chapters are capital, management, and regulation.

#### I. TYPES OF RESOURCES

The natural resources on which productive activity depends have different and overlapping characteristics. The resources may be known or unknown, available or unavailable, scarce or abundant, dependable or undependable, wasting or non-wasting, destructible or indestructible, reproducible or non-reproducible.

*Known and Unknown.* More than one Indian froze to death on ledges of coal without knowing the heat-giving possibilities of the black stone. One is likely to think of known resources as those whose existence, location, quantity, and quality are known. Frequently a resource which is known in one respect may not be known in others, or at least the extent of knowledge may be much greater in some than in other respects. Strange as it may seem, some substances are known to exist before their physical existence has been demonstrated. Scientists knew that a substance with the properties of radium existed before it was actually found, and there are still other substances which have not disclosed their existence to the

penetrating eye of science. Of most of the resources whose physical existence is known, there is also considerable knowledge as to their sources and location. For instance, the geological conditions under which oil is found are fairly well known, as well as the areas of the world's surface where these conditions occur. This knowledge is not sufficiently complete, however, to exclude further important discoveries, even though such discoveries are becoming increasingly rare. During the present century, notable additions have been made in the case of potash, sulphur, borax, and bauxite. Even when the location of resources is known, their extent and quality may be highly uncertain. Some resources, such as timber, lend themselves to measurement with relative ease. But this is not so with concealed resources, such as oil, natural gas, and sea life. Recoverable oil reserves were estimated to be about five billion barrels in 1925, whereas since that year over eight billion barrels have been consumed.

*Available and Unavailable.* When resources are known to exist, and even when their location is known, it does not follow that they are available for use. In some instances they may be inaccessible, as with minerals at the poles. In other cases there is lack of knowledge as to how the resources may be made available. It is believed, for example, that there is a vast amount of energy confined within the atom — the smallest particle of matter known to man. As yet no means have been devised by which this highly compressed energy can be released. Finally, some resources are unavailable because of the cost involved in obtaining them. Low-grade ores, especially iron and bauxite, are found scattered abundantly over the surface of the earth, but not in sufficiently concentrated form to make their extraction commercially feasible. A somewhat similar situation exists with respect to the resources of the sea. Of 92 elements known to exist, 32 are found in sea water. In some sections of the world, salt is obtained in considerable quantities from water, while gold, silver, and radium are among other substances which might also be extracted from the sea if the costs were not prohibitive.

*Scarce and Abundant.* Whether a resource is scarce or abundant does not depend entirely upon the amount of it, but also upon the extent to which it is wanted. The same land which was abundant for both the red man and the early white settlers has become scarce with a population of 127,000,000. When a resource is so abundant in relation to the requirements for it that it can be had without limit, it is often called a "free" good. The most obviously abundant of all resources is air. It blankets the entire surface of the earth, fills all unoccupied space, and is available in abundance to all who want it. But though a resource like air is abundant in a general sense, particular kinds of it, such as pure, hot or dry air, may be scarce. It is the scarcity of a particular combination of qualities which gives rise to the demand for ventilating and humidification facilities. A somewhat similar situation exists with water. This is likewise scattered over the entire world, but is not, of course, so all-prevailing as air. While water constitutes over half of the earth's surface, the resource is not distributed evenly. It is concentrated in pools and streams both on and beneath the surface. In some places the water is excessive and makes drainage necessary, while in other places there is extreme absence, which makes irrigation necessary. There are also different kinds of water, such as salt and fresh, hard and soft, etc. Consequently, there may be an abundance of some kinds and a scarcity of others.

*Dependable and Undependable.* Among the available resources some are dependable and others are not. The wind was among the early sources of power but has always been notoriously unreliable. This was fully realized by early mariners who depended upon it to move their vessels. Water is unreliable although not ordinarily so much so as wind. Excessive rainfall destroys crops and property by flood, while insufficient rainfall results in drought. Flowing streams may be available for power at one time but not at another. On the other hand, mineral resources, such as coal, are ordinarily dependable until they have been exhausted by use. This has made coal a more satisfactory source of power

than wind or even water. Climatic changes may follow a fairly uniform pattern, yet they cannot be depended upon to follow this at any given time.

*Wasting and Non-Wasting.* Even when resources are dependable, they may or may not continue to be available indefinitely. Inorganic resources, such as mineral deposits, ordinarily remain until they are used. But other resources have limited life spans within which they must be used for certain purposes. Whether animals are used as beasts of burden or for food, they can serve these purposes only within the span of their natural life. Thereafter the process of deterioration develops, making both plants and animals useful mainly as fertilizer.

*Destructible and Indestructible.* Whether or not resources waste away independently of use, some are destroyed in the process of use and others are not. Among the most distinctly indestructible resources are air and the force of gravity. Their use for one purpose does not diminish their availability for other purposes. At the other extreme are the mineral deposits. These cannot be used without reducing the quantity available for other purposes. Some resources, as copper, have a durability in use, while others, such as coal and oil, do not. Between these extremes are still other resources which may or may not be destroyed, depending upon the way in which they are used. This is the case with water. Water which has turned machinery once as it fell over a dam can be used again and again as it falls over other dams. But water used for irrigation cannot be used again. If iron is exposed to the elements it corrodes and wastes away, but if its surface is protected by an airtight covering of paint or grease, the metal can be used indefinitely without deterioration. So far as anything man may do, the surface of the earth is practically indestructible, but not so its fertility.

*Reproducible and Non-Reproducible.* Nature provides for the replenishing of some of her resources but not others. The earth's surface is virtually a non-reproducible resource. From time to time great internal movements of the earth result in

changes in the earth's surface; some previously exposed land becomes submerged and land which was previously submerged becomes exposed. But for most purposes the surface can be considered as a fixed quantity estimated at about 52,000,000 square miles, of which nearly 3,000,000 are within the continental limits of the United States. Mineral deposits also tend to be non-reproducible. Strictly speaking, nature is constantly increasing these deposits, but in most cases the process is believed to be so slow in relation to the speed at which these resources are being used that they may be considered practically non-reproducible. In other cases the reproduction is rapid, as with the breeding of plants and animals.

## II. UTILIZATION OF NATURAL RESOURCES

### A. RESOURCES AND POPULATION

Somewhat over a century ago there developed a controversy, which has continued to the present time, as to whether the resources of nature are adequate to meet man's requirements. An Englishman by the name of Malthus started the controversy by observing that population tended to increase more rapidly than the products of the soil on which the population depended for a living. He further observed that unless voluntary birth control relieved the pressure of population on resources there would be war, famine, and pestilence. These forces would automatically reduce the pressure to a point where the resources would be adequate to provide subsistence for the remainder of the population.

Since the time of Malthus many changes have occurred. Despite ruthless weeding out of the world's population by war, famine, and plague, the size of the population has increased and also the volume of production. Moreover, production has tended to increase faster than population. Between 1900 and 1930, for example, the world population is estimated to have increased from 1.5 to 2.0 billion, or  $33\frac{1}{3}$  per cent, while during the same period the estimates of the Federal Reserve

Bank of New York indicate that the world production of basic commodities increased nearly 100 per cent. It has already been shown that in the United States production has been increasing considerably faster than the population.

If Malthus were to return to this world some of the things which have happened would surprise him, but others would not. He would be surprised at the improvements in the art or method of production. He realized that changes of this kind might relieve the pressure of population on resources, but he little suspected the phenomenal changes which have occurred. He would likewise be surprised at the extent to which there is deliberate control of births. He advocated late marriages in order to reduce the birth rate. But curtailment of births has come largely in another direction — through the use of contraceptive means and devices. The importance of this possibility Malthus failed to realize probably because, as a clergyman, he considered such means immoral. Whatever one's view may be as to morality or immorality of contraceptive practices, they are increasing rapidly.

At the same time Malthus would not be surprised at certain other things which have occurred. He would observe, for example, that pressure of population on resources had contributed largely to the World War, to the invasion of China by Japan, to the Italian invasion of Ethiopia, and to the dissatisfaction of Germany with her existing territory. He would also notice that famines have occurred recently in Russia and China. These are circumstances he predicted would result if improvements in the art of production did not relieve the pressure on resources. He would also see, even in the United States, indication of pressure developing under the existing technique or methods of utilizing the resources.

Before considering possible changes in the methods by which resources may be made better to serve the population, it will be well to consider the manner in which they are used at the present time and notice how the existence of pressure shows itself.

Among the resources land holds a position of conspicuous

importance. In the first place, it is a solid surface. As such it furnishes a platform on which the drama of life is enacted. On it individuals can move about, construct their buildings, breed their animals, and plant their crops. In addition to this the land surface makes possible the use of other resources. It gives access to the rich mineral deposits below the surface and to the air, rain, and sun.

In utilizing the land either of two methods may be employed. A great deal of labor, capital, etc., may be used on a small amount of land, in which case there is intensive utilization of the land. Or there may be extensive utilization, in which case the labor, capital, etc., is distributed more thinly over a large amount of land.

#### B. INTENSIVE UTILIZATION OF RESOURCES

In a sense land is a machine through which human efforts are converted into the particular things which man wants. This is especially so with land used for agricultural purposes. Within limits it is possible to stimulate the amount of product obtained from the land. But a limit is reached ultimately beyond which any further stimulus does not increase the output and may even diminish it. The situation is somewhat like feeding gas to an automobile. Within limits the speed of the machine may be increased by feeding it more gas, but finally additional gas actually reduces the speed of the motor.

*Agricultural Land.* The effect of intensive utilization may

TABLE 7. EXPERIMENTAL LAYOUT OF LAND

Acre No. 1	No. 2	No. 3	No. 4
0 bags 10.6 bu.	1 bag 14.9 bu.	2 bags 17.3 bu.	3 bags 18.7 bu.
	4 bags 19.5 bu.	5 bags 19.9 bu.	6 bags 19.0 bu.
	No. 5	No. 6	No. 7

be illustrated in the case of agricultural land by the application of fertilizer for the purpose of increasing the wheat yield per acre. Imagine a tract of experimental land divided into seven parts of one acre each. Every acre is the same in quality, is equally exposed to sun and rain, and is cultivated in the same manner except for the amount of fertilizer used. The layout of the land is illustrated by Table 7, each acre

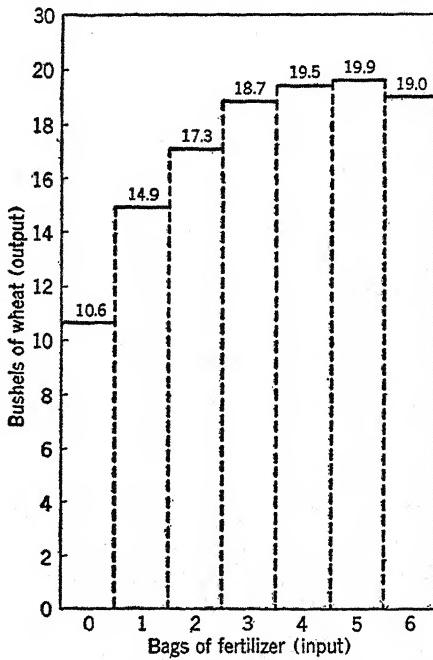


FIGURE 27. ILLUSTRATION OF RELATION BETWEEN INPUT AND OUTPUT

being designated by a number on the outside of the diagram. Within each block the upper figure represents the bags of bone meal fertilizer used and the lower figure indicates the wheat yield in bushels.

Comparing the input of fertilizer with the output of wheat reveals several points of importance. First, there is a notable tendency for total output per acre to increase under the stimulation of additional bone meal. This is shown by Figure

27. Without any fertilizer the yield is 10.6 bushels as against 14.9 when one bag of bone meal is used. In view of the fact that both acres are treated alike except for the application of bone meal, this additional output may be attributed to the use of fertilizer. Similarly when one more bag of bone meal, or a total of two, is applied, the total yield per acre is still further increased to 17.3 bushels. Ultimately a point of maximum total yield is reached, after which it is no longer possible to increase output. This point is reached in the present illustration when 5 bags of fertilizer are applied to acre 6 whose total yield is 19.9 bushels. With an additional bag or a total of 6 applied on acre 7, the yield is smaller, being only 19.0 bushels. Here the added bone meal has ceased to stimulate and has begun to destroy or burn out the plants. Never is stimulation deliberately applied beyond the point where some increase in production, even though small, is expected. From here on in the discussion only those efforts which serve to increase the total yield will be considered.

*Diminishing Returns.* Before the point of maximum yield per acre is reached, there are indications of increasing resistance to further stimulation of output or production. When one bag of fertilizer is applied, the total yield is 14.9 bushels, an increase of 4.3 over the yield when no fertilizer is used. But when the amount of fertilizer is doubled the additional yield is not doubled. With two bags of bone meal the

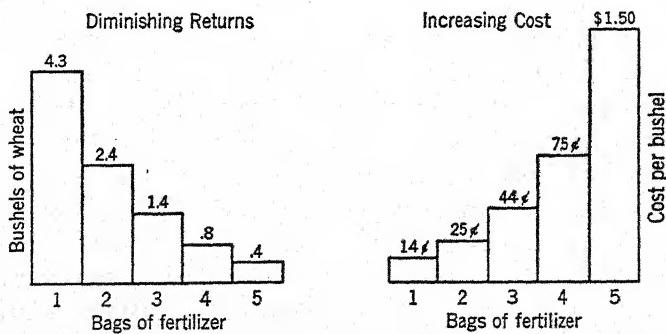


FIGURE 28. ILLUSTRATION OF RELATION BETWEEN DIMINISHING RETURNS AND INCREASING COST

total yield is 17.3 bushels, or only 2.4 bushels more than when a single bag of fertilizer is used. By the time 5 units of bone meal have been used so that a total yield of 19.9 bushels is obtained, this amount is only 0.9 bushels more than the yield would have been with the use of one less bag of bone meal. The declining amounts by which production per acre increased as additional fertilizer was used is shown in the left-hand diagram of Figure 28.

This tendency for total production from a unit of land to increase, but to increase at a diminishing rate after a certain point has been reached, is sometimes referred to as the law of diminishing returns. As will presently be seen, the tendency is not restricted in its application to agricultural production nor to land of any particular quality. Rather it applies to land of any grade when the technique of production remains unchanged. The law may be stated thus: With no changes in the way in which labor or capital (or both) are applied to a given piece of land, a point is reached sooner or later after which each additional unit of input will yield a smaller addition to the total product than was yielded by the preceding unit.

The amount of stimulation which may occur before the resistance develops depends partly on the qualities of the land and partly on the way the land is used. Some land which is very deficient in certain chemical qualities necessary for growing certain crops will, as these chemicals are supplied through fertilizer, produce at an increasing rate until a considerable amount of the chemical property has been added. In the illustration here used the chemical composition of the soil was such that a single bag of bone meal furnished the greatest increase in yield, with smaller increases as additional bags were applied. When land is used repeatedly for raising a particular crop, the productive power of the soil will wear out in time unless those qualities which the crop is taking from the soil are artificially supplied in increasing quantities. If, however, the method of cultivation is changed, the resistance may be diminished. If, instead of growing the same crop

each year on the same land, the crops are changed in certain combinations, there are possibilities of one crop's putting back into the soil some of the chemical properties that another has drawn out. In this way the land is not worn out so quickly for any particular crop, and hence does not need so much artificial stimulation. Although the quality of land influences its yield, the quality is not responsible for the tendency to diminishing returns. This tendency will occur sooner or later on land of any quality.

*Increasing Costs.* The tendency to diminishing returns gives rise to a tendency for money costs of production to increase. If bone meal costs 60 cents a bag, the average cost is about 14 cents for each of the 4.3 additional bushels of wheat obtained when one bag of fertilizer is used. It will be noted that the cost of the fertilizer is charged only against the output which results from its use. Since 10.6 bushels can be raised with no fertilizer, this amount must be deducted from the total yield of 14.9 bushels when one bag of fertilizer is used in order to determine how much of the total yield is due to the use of fertilizer. In this case the difference is 4.3 bushels, and it is against this that the cost of the bone meal must be charged. Similarly, when a second bag of fertilizer is used, the cost of it must be assessed against the additional yield of 2.4 bushels. Finally, when the additional yield is only .4 bushels the average cost is at the rate of \$1.50 a bushel, as indicated in the right-hand diagram of Figure 28.

*Point of Most Profitable Use.* How far it will be advantageous to push production beyond the point where the maximum increase occurs in output depends partly on the selling price of the product and partly on the money costs incurred in stimulating further production. If in the illustration here used the fertilizer cost \$2.50 a bag and the wheat was selling at 50 cents a bushel, there would be no advantage in using any fertilizer. A single bag would increase the output of an acre by only 4.3 bushels and thus furnish additional income of only \$2.15, as against \$2.50 for the cost of the fertilizer. But suppose fertilizer fell in cost to \$1.50 a bag, then it would be advan-

tageous to use one bag when wheat was selling at 50 cents a bushel. The single bag of fertilizer, by increasing output per acre 4.3 bushels, would furnish additional income of \$2.15, as against the additional cost of \$1.50 for fertilizer. At the same time it would not be advantageous to use a second bag of fertilizer as it would increase output by only 2.4 bushels, which at 50 cents a bushel would mean only \$1.20 additional income as against \$1.50 additional cost. On the other hand, suppose the cost of fertilizer remained \$1.50, but the selling price of wheat increased to 75 cents a bushel. Now two bags could be used advantageously, for the additional income from the second bag would be \$1.80 as against \$1.50 additional cost.

The illustration here used has been intended merely to emphasize a fundamental tendency encountered in the use of land. The stress on fertilizer is not intended to suggest that this is the only form of stimulation which may be applied, nor that the cost of it is the only one to be considered in deciding how intensively the cultivation of soil will be advantageous. When other costs are considered the principle remains the same. Moreover, the same tendencies are encountered when land is used for other than agricultural purposes.

*Building Land.* When attention is turned to land used for building purposes the tendency to diminishing returns and increasing costs is also encountered. A few years ago there were indications of a skyscraper mania, and the members of the American Institute of Steel Construction were interested in knowing how high it would be profitable to construct a skyscraper in the center of New York City. Engineers, draftsmen, etc., were engaged to make complete plans for seven different-sized buildings to cover a designated city block. The alternative possibilities disclosed that diminishing returns were encountered rather quickly. The total rentable space increased as floors were added from 513,000 square feet for an 8-story structure to 1,800,000 for one with 75 floors. The first 8 floors contributed an average of 64,000 square feet, the next block of 7 floors added an average of only 41,300, and the amount of additional space continued to decline to an average

of 11,500 for the final 12 stories. This decline is accounted for in part by restrictions on building which require the wall line to be set back at intervals as the height of the building increases. Even in the absence of these regulations, given amounts of labor and capital would provide diminishing returns in the form of rentable space after the structure had reached a certain height by virtue of such considerations as the greater distance materials would have to be hoisted and the additional space required for supports and elevators as the height of the building increased. Here also the diminishing rate of output in terms of rentable space reflected itself in monetary terms. The investment for the 8-story building, including the investment in the land, was estimated to be \$22,000,000, while that for the 75-story structure was \$43,000,000. The average cost per square foot of space increased from \$9.87 for the 8-story building to \$26.75 for the last 12 floors of the 75-story structure.

Before it was possible to decide the most profitable height for a structure, it was necessary to estimate the income which would be obtained from the rental of space. On the basis of the estimates made at that time the conclusion was reached that not more than 63 stories would be profitable. The estimated return on the investment rose from 4.2 per cent on an 8-story structure to 10.3 per cent for 63 floors, and then declined to 10.0 per cent for 75 floors. This does not mean that 63 floors is the maximum height to which an office-building can be constructed profitably. With higher-priced land more intensive use of it with higher structures would be profitable, whereas with less valuable land a structure of even 63 floors would not be economically justified. On the other hand, if rentals increased in relation to costs of furnishing rental space, land could be more intensively used to advantage, while reduced rentals would require lower buildings in order that the land might be used most profitably.

*Mineral Land.* When dealing with the utilization of minerals, the tendency to diminishing returns is even more serious. Land used for a building is not destroyed; while the cultiva-

tion of crops may destroy the fertility, this can be replaced, but mineral resources are destructible and non-reproducible. Consequently diminishing returns are experienced in addition to the unavoidable and perpetual depletion of the resource. These two conditions are usually so interrelated that their influence cannot be separated satisfactorily, but they both increase the resistance encountered in the extraction of minerals. According to the United States Coal Commission, between 1872 and 1922 the average thickness of beds declined from 158 to 80 inches and the average depth of working increased from 235 to 415 feet. During substantially the same period, despite improved methods of mining, the production per man per day decreased from 7.5 to 4.0 tons, with allowance for the shorter workday in recent years.

### C. EXTENSIVE UTILIZATION OF RESOURCES

When pressure or resistance develops with the land of a given grade already in use for a particular purpose there may be possibilities of bringing more land into use for that purpose. There may be shifts to either better or poorer land.

*Better Land.* Preference is always in the direction of land which is better suited for a particular purpose than that which is less suitable. The better land requires less stimulation, and average costs of production for the total output are lower than with poorer land. But even though for a particular purpose there is better land in existence than that already in use, the better land may not be available. Any one of several circumstances may preclude its being used.

(a) *Lack of Knowledge.* Important recent shifts which have been occurring in the use of land for agricultural purposes in this country reflect in part an earlier lack of knowledge that better land existed. Historically, poor land was used first and then the better land began to be cultivated. The early settlers landed on the eastern shores and found themselves surrounded by less fertile soil than existed in the Middle West. If these settlers had come by plane instead of boat and had been able to scout the country before settling, the economic

development of the country would have been along distinctly different lines. Much of the land which was originally tilled and has since continued in use would have been passed by in favor of better soil.

(b) *Competition.* In addition, competition for land of a given grade may prevent superior land being used for a particular purpose. Some of the finest wheat-raising land in the country surrounds New York City, yet much of this land is not used for wheat production. Rather it is used for dairying and vegetable farming. Proximity to a large market makes the land more profitable for perishable than for durable food products. Unless the purpose for which land may be wanted is also the most profitable one for which it can be used, it will not be available for that purpose.

(c) *Speculation.* Not infrequently land is held from its most productive use in anticipation of speculative gains through future increases in its value. A city lot being used as an open-air parking space might be more productive if used for a building in which a much larger number of cars could be parked. Even if the present income from the land does not cover taxes, the owner may be willing to suffer present losses in anticipation of selling the land at a future time for considerably more than could be gotten for it at present. In some instances farm land is cultivated under the same circumstances, and residential sites are likewise kept from being used as business locations. Not infrequently slums develop because property owners are anticipating the speculative sale of the land for some public improvement or industrial purpose, and in the meantime are not interested in maintaining their properties in good condition, or in remodeling those which are antiquated.

(d) *Tradition.* In some instances tradition prevents land being used for its most productive purpose. Family homesteads and estates are maintained at times despite the fact that they are burdensome and that the land could be used more profitably in some other way. A business enterprise may also retain an established location long after it ceases to

possess any particular advantage for that particular business and when it could be used more advantageously for some other line of business.

*Poorer Land.* Desirable as better land may be, if such land is not available the only alternative shift is to inferior land. Ordinarily there is greater opportunity for shifting in this direction, since there is likely to be considerably more inferior than superior land available for any given purpose. For instance, it is estimated that there are about a billion acres of land in the United States suitable for raising crops. About one third of these was cultivated in 1929, and another third could be brought into use rather easily by plowing pasture and other idle land. But the remaining third awaits further pressure on better land. This remainder cannot be brought into use without considerable difficulty in the way of drainage, irrigation, and forest clearing. It must be realized, however, that poorer land for one purpose may be better land for another. Thus some of the richest mines have been in areas with extremely poor soil for agricultural purposes.

When the utilization of land is extended to poorer grades, the costs of producing additional quantities of goods thereon is not increased over that which would be incurred with the better grades which are in use. Not until a given amount of labor and capital will yield more on a poorer grade than on a better grade will the labor and capital be shifted to the poorer land. A farmer would not use time, effort, and capital in draining swamp land for purposes of cultivating the land if it would yield no more than could be yielded by a similar expenditure on land already under cultivation. Large department stores in a central business area may establish branch stores in outlying territory even though these suburban sites are not capable of yielding as large aggregate return as the central site. But as between using the central site more intensively or resorting to poorer commercial sites in the suburbs, the latter may be more profitable. In other words, it is the high cost of using better grades of land more intensively that makes the use of poorer grades advantageous.

Competitive forces tend to distribute labor and capital as between different grades of land, so that the per unit cost of additional or differential output is substantially the same on different grades being employed at the same time.

Poorer grades having come into use, they may, however, continue to be employed for that purpose after they have ceased to be profitable. Under private ownership land is not promptly withdrawn when its operation ceases to be profitable. Sometimes the land is inherited so that the property represents no investment to the owner on which he must derive an income. Or if the owner has purchased the land his investment therein is in the nature of a "sunk cost" and he continues to use the land so long as the income at least covers the current costs of operation, even though nothing is received for the land itself. Consequently at any time extremely poor land may be in use when there is insufficient pressure on resources to warrant the use of it. In fact, the government is now attempting to eliminate some such land from use for certain purposes. Extremely poor farm land, for example, is being leased and purchased by the government for conversion into forests.

#### D. FUTURE UTILIZATION OF RESOURCES

Although the knowledge, facilities, and other circumstances existing at any time limit the effectiveness with which resources can be utilized, there are possibilities for changing the circumstances so that the tendency to diminishing returns and increasing costs may be offset. Future economies may arise through improvements in the technique of production, substitution of resources, and the reduction of waste.

*Improved Technique of Production.* The method by which resources are utilized is often referred to as the technique of production. As knowledge and experience increase, the way is opened for more effective ways by which resources are made to serve useful purposes. Whether the technical improve-

ments are mechanical or non-mechanical, they sometimes operate merely to reduce costs without any necessary increase in the actual volume of production from a given amount of land, while in other cases the improvements actually increase output and thereby make possible reductions in costs.

(a) *Mechanical Devices.* One of the most conspicuous instances of a mechanical device increasing the productiveness of natural resources occurred with the invention of the steam engine. Many English mines had closed because hand pumps could no longer remove the increasingly large quantity of water which accumulated in mine pits as operations went further underground. When mechanical pumping became available the water could be removed, thus making possible the mining of rich ore. Improvements in the construction of locomotives and cars have made possible the carrying of increasingly large quantities of freight and passengers over a given amount of land on which the tracks are laid. The development of automatic telephone exchanges has made possible the handling of a larger number of calls to a given floor space than was possible with manually operated exchanges.

An instance of a mechanical device which at best can only reduce costs of production without increasing the amount of product is a recently announced mechanical cotton picker. The amount of cotton available for picking is determined before this machine goes into operation and the device merely serves to provide more economical picking. In fact, with such a device the actual amount of cotton gathered per acre may be somewhat reduced since the machine misses some cotton which would be gathered by hand picking.

(b) *Non-Mechanical Devices.* Important as mechanical improvements may be in offsetting the tendency to diminishing returns, there are also possibilities along non-mechanical lines. Extension and further development of scientific management offer possibilities for more effective coordination of labor and capital in the development of resources. In agriculture noticeable increases in yields have come through

the rotation of crops rather than using the land continuously for the same crop. According to the Society of Industrial Engineering, the use of mulch paper for retaining moisture has increased the crop yield for pineapples 30 per cent, potatoes 73 per cent, and sweet corn 700 per cent. The use of copper sulphate for the removal of aphides on tomato plants increases both the yield and the quality of the fruit. Recent experiments indicate that tomatoes can be grown in shallow tanks of liquid containing necessary nourishment, and that the yield per acre of tank space is 217 tons, as compared with 5 tons to the acre when grown in the field.

*Substitution.* With increased knowledge and improved facilities there are also possibilities for advantageously substituting one type of resource for another. Pressure on the relatively scarce resources may be reduced by shifting to relatively more abundant ones. An illustration of this occurs in the use of land for residential and industrial purposes. With improved highways and modern facilities for transportation and communication there are increasing incentives for population to shift from the intensely congested city areas with high rents to the less intensely used rural areas with lower rents. The present tendency to spread to the outskirts of a city may in the future result in movements still farther from metropolitan areas. It is reported that at present all starters, generators, and lamps for the Ford car are made in plants scattered within a fifty-mile radius of Detroit. General Motors has also announced the geographical decentralization of manufacturing and assembly operations.

There are also possibilities of reproducible resources being substituted for those which are non-reproducible. Through developments in the field of chemistry new opportunities are being developed for farm products to take the place of mineral resources. Store scales for which metal was used almost entirely are now being made also from plastic products. Oil for lubrication and for fuel in the operation of automobiles has come from petroleum resources. Synthetic oils and fuels now loom on the horizon. It is claimed that soy beans may

be made to yield a very high grade oil and that alcohol extracted from corn stalks and other farm products can be used as a substitute for gasoline. It is reported that in some locations alcohol is now being combined with gasoline for use as a fuel.

Furthermore, there are indications of shifts from less to more dependable sources of supply. Here the shift is from the farm to the factory. Synthetic products of the factory have two advantages over natural products; their supply is relatively independent of weather and climate, and the quality of the synthetic product is more uniform. When perfumes and flavoring extracts such as vanilla are produced as by-products in the chemical laboratory there is less need for land on which to grow plants furnishing those perfumes and extracts. The incubator has taken the place of the hen in hatching eggs, and a machine may, in time, take the place of the cow in manufacturing milk. This product is about 90 per cent water and the cellulose which constitutes the balance can be obtained from a variety of sources, including many fibrous plants which are now considered weeds.

Finally, shifts are occurring from destructible to indestructible resources. An instance of this occurs in the case of fuel such as coal and natural gas. In contrast to these are the indestructible resources such as tides, flowing streams, and sunshine. As yet little has been done toward harnessing the rays of the sun for heat and power, although this holds possibilities. Steps are being taken in this country to utilize the tides as with the partially completed project at Passamaquoddy Bay, Maine. The utilization of running streams for the generation of electricity is well under way and is likely to revolutionize many aspects of economic life.

*Conservation.* While scientific developments of the future may make conservation of resources unimportant, at present science is a long way from this goal. Even if one hundred blades of grass could be made to grow where one grew before, the cost per blade might be greater for the hundred than

for the one. Until science gives more evidence of both increasing production and decreasing costs, there is abundant need for conserving the resources, particularly minerals and others which, like forests, may be reproducible only over long periods of time.

The further scientific knowledge develops, the more completely can existing resources be utilized. Research in the field of chemistry and allied sciences has brought forth an entirely new group of products known as plastics. Products formerly made of glass, wood, or metal are now made of such compositions as bakelite. It has been found that common slash pine, which grows to the same size in five years as northern spruce grows in sixty, can be used in making paper pulp. Moreover, the slash pine can be grown on soil not so well suited to spruce. Thomas Edison found that the goldenrod plant contained the same substance as rubber, thus opening the possibilities for the commercial use of what is now considered a prolific weed.

In part the waste of resources occurs because existing knowledge is not disseminated among those who need it. An illustration of this occurs in the use of coal for home heating. Comparatively few individuals are sufficiently familiar with the principles of combustion for them to know how to obtain the maximum heat from a given quantity of coal. Consequently, a considerable part of the coal's energy goes up the chimney. The importance of such waste is suggested by the services which coal dealers frequently offer their customers. Free advice and instructions will be supplied as to how the consumer's furnace can be operated with a minimum amount of coal. By thus reducing the cost of coal heating, the dealers hope to reduce the incentive for consumers to shift to other fuels, notably oil. But the business interest which dealers may have in furnishing information does not in any way detract from the importance of such information for the conservation of coal.

In other instances resources are dissipated because it is individually profitable to be socially wasteful. The struggle

for individual gain in the competitive process prompts owners of resources to follow practices which are beneficial to themselves even though natural resources are wasted in obtaining profits. A conspicuous illustration of this occurs in the extraction of oil. The United States Bureau of Mines has recently estimated oil reserves at an amount sufficient to last about fourteen years with the present rate of consumption. Even if this is an understatement and if additional reserves are discovered and more effective facilities for refining are developed, there is no social justification for the excessive waste of the resource in the process of extraction. The opportunity for extreme waste of this resource arises mainly from divided ownership of the land under which the oil exists. The resource is found in great pools under the surface of the earth and over these pools are layers of heavily compressed gas. The maximum recovery of both oil and natural gas results from careful drilling to prevent the escape of gas by which the oil is forced to the surface of the earth. After the oil has been extracted the gas will rise to the surface of its own accord since it is lighter than air. But this careful drilling and extraction is impossible because the same pool of oil underlies the surface land owned by different parties, and wells drilled by one owner may be used to extract the oil underlying the land of other owners. Consequently, when a pool of oil is discovered there is a mad rush of all property owners with land over the pool to obtain as much of the oil as possible. Almost over night the beach resort of Venice, California, was converted into a forest of oil derricks even though a few proper drillings would have been sufficient for the maximum recovery of oil. In this competitive struggle for individual gain there is a loss of both gas and oil. The improper drilling permits the gas to escape before it has driven the oil to the surface, with the result that estimates indicate that from 30 per cent to 90 per cent of the oil of various pools is still underground beyond any hope of recovery. Further waste of the oil occurs when it arrives at the surface. The absence of adequate facilities for storage

and transportation results in large losses through seepage, fires, and evaporation. It has been estimated that less than 25 per cent of the petroleum underground actually reaches the pipelines through which the oil is transported to refineries.

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While natural resources can exist without man, he cannot exist without them. They are essential for his life and necessary to his enjoyment of it. The pressure which increasing population and higher standards of living impose on natural resources can be relieved in part by the manner in which the resources are used. The extent to which the pressure can be relieved, and the tendency to diminishing returns offset, depends upon the improvements in the methods of using the resources. How far these improvements will go only time will disclose, but upon them the future prosperity of mankind depends.

#### QUESTIONS

1. In what respects may resources be unknown?
2. "Resources may be physically but not economically available." Explain.
3. What determines whether resources are abundant or scarce?
4. In what sense can some resources be said to be non-reproducible?
5. Distinguish between destructible and indestructible resources.
6. It is sometimes said that population tends to increase more rapidly than the means of subsistence. Has experience confirmed this observation? Explain.
7. Is there any indication of pressure of population on resources?
8. By what means might pressure of population on resources be relieved?
9. What is meant by intensive as contrasted with extensive utilization of resources?
10. "So long as the production is increasing a nation is in no danger of experiencing diminishing returns." Is this statement valid?
11. "Diminishing returns are not encountered with high quality resources." How, if at all, is the phenomenon of diminishing returns related to the quality of resources?
12. "Diminishing returns is a sign that utilization of resources has been carried too far." Evaluate this statement.
13. "Diminishing returns and increasing costs are two aspects of the same thing." Do you agree? Explain.

14. "The point of most profitable use corresponds with the point at which diminishing returns develop." Is this a valid statement? Explain.
15. What circumstances may prevent a shift from poorer to better quality resources?
16. Explain what is meant by "improved technique of production."
17. Point out some ways in which the pressure may be relieved on scarce resources by means of substitution.
18. "The use of scarce resources when abundant ones are available is a type of waste." Evaluate this statement.
19. "Until science gives more evidence of performing a twofold task, there is abundant need for conserving natural resources." What is the two-fold task to which reference is made?
20. What is meant by the statement that "it is sometimes individually profitable to be socially wasteful"?

## CHAPTER XII

### CAPITAL

#### I. EVOLUTION OF CAPITAL

*The Indirect Use of Resources.* Whether or not man either ascended or descended from the monkey, the fact remains that primitive man used the gifts of nature in substantially the same way as did monkeys and other animals. For the most part he merely used the things nature provided and used them in the form so provided. Caves furnished shelter when needed, wild plants and animals supplied food, and thirst was quenched by drinking from springs and running streams. Man and beast alike gratified their wants by direct use of the things furnished by nature.

Gradually man began to use resources indirectly. He fashioned them into tools by which the effectiveness of his strength and ingenuity was greatly increased. He fashioned harpoons from reindeer horn; later he devised means of attaching sticks to pieces of stone which served as mallets and crude hatchets. For centuries man's chief tools were the ax and the bow and arrow. Trees and logs were used as boats to assist the imperfect natural swimming power of man. After centuries of using crude implements fashioned from bone and stone, the use of metal tools developed. Among these came chisels, planes, files, and other scrapers, trowels, shears, and saws. Hammers of different kinds emerged, such as the claw and riveting hammers. Until slightly over a century ago the only measuring tools were the equivalent of a foot-rule and compass. Measurements were generally made by sight. The spirit level, gauges, calipers, and similar devices emerged. In making tools of any kind man was using resources indirectly. The tools served to increase his control over nature. With bow and arrow he could hunt more successfully, and with boat

and net he could catch more fish; with hoe and plow he could obtain more products from the soil than was possible without these facilities. As opportunities for trade developed, the production of goods shifted from the home to the factory, where goods could be made on a larger scale. But this required the construction of buildings used only for work purposes. Individuals did not live in the factory.

*Mechanical Power.* For centuries progress in the conquest of nature was slow. Man struggled against both lack of knowledge and the limitations of his physical strength and dexterity. He had to make the tools by hand and usually had to operate them with his own energy. In some cases the tools were designed so that animals, wind, and water might furnish the power for their operation. Helpful as were these sources of energy, production was still severely restricted by the limitations of human energy.

A tremendously significant advance was made in relieving man of the limitations of his own strength with the development of facilities for the mechanical generation of power. Until these facilities were developed no rapid strides were made in the use of resources. Individuals had long tried to harness the expansive force of steam but had been only partially successful. Watt's perfection of the steam engine opened the way for a new source of power. Moreover, it was a more effective source than man, beast, wind, or water. With the steam engine at his disposal, man's control over nature increased greatly.

In the United States mechanical power was not particularly significant until after the Civil War, and did not reach staggering proportions until the present century. It is estimated that shortly after the Civil War only about 6,000,000 horsepower had been generated annually through mechanical equipment. By the end of the century the amount had increased to about 20,000,000. During late years it has been growing by leaps and bounds until it was estimated to be about 1,200,000,000 horsepower in 1935. This estimate covers all of its uses including agriculture, mining, transportation, and manufacturing. If manufacturing alone is considered, the rapid

growth since 1900 is well illustrated by Figure 29. Much of this growth in mechanically generated power is accounted for by the use of electricity in place of steam. While the direct use of steam had decided advantages over earlier sources of

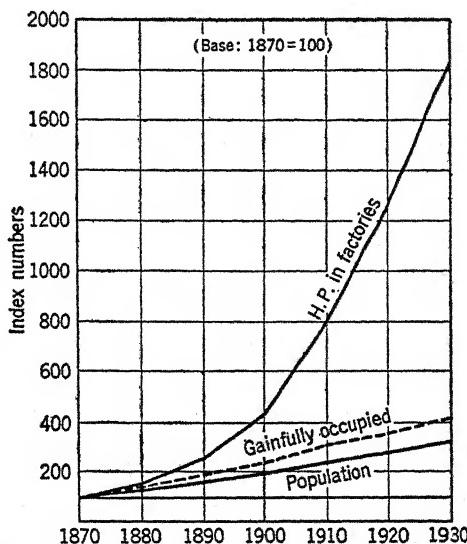


FIGURE 29. EMPLOYMENT AND HORSE POWER

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power, it had limitations, including the necessity for using the power at the place where it was generated. This handicap could be overcome by converting steam into electrical energy capable of being transmitted considerable distances. While the indirect use of steam is still extremely important, there is increasing use of water as a source of electric energy.

*Machine Tools.* Once mechanical power was available it was soon employed in operating the tools which were formerly operated by hand. The chisel became the engine lathe, the brace and bit became the drill press, the hand plane gave way to the planing machine, and the grinding wheel was operated by mechanical power. The hammer of the blacksmith emerged into the gigantic hydraulic presses capable of exerting thousands of tons of pressure at the touch of a button. Not only

did the shift from hand to machine tools permit more tasks to be done with greater rapidity, but more arduous work could be performed and a much higher degree of precision and accuracy obtained than with manually operated tools.

The use of machine tools opened the way for expansion in both mechanical and non-mechanical equipment. Machine tools provided not only equipment which could be operated by hand or by foot, such as the sewing machine, but equipment to control the mechanism. At first machines even though operated by mechanical power were controlled by hand. In the course of time mechanical devices were developed which served to control or manipulate machinery. In many cases hand-operated equipment gave way to semi-automatic machines, which in turn gave way to automatic facilities for producing goods. Through mechanical conveyors and other devices human hands may not touch products from the time the raw materials are received at a plant and started on their journey through it until the finished product is removed from its containers by the ultimate consumers. With the availability of mechanical equipment there were also possibilities of providing more abundant and elaborate facilities of a non-mechanical character. More and bigger work-places came to be constructed until the modern factory and office-building emerged. Many things which are commonplace office supplies, such as paper, pencils, and clips, would not be available in such abundant quantities if it were not for the machines which make the machines by which these supplies are manufactured.

*Science.* In the development of both mechanical and non-mechanical facilities, science has, until recent years, played an accidental rather than a deliberate part. For centuries man had made no attempt to uncover the mysteries of nature. His fear of nature was too great for him to take such liberties. Consequently, his knowledge came more or less accidentally through his personal experiences. Even after scientists began a rather systematic study of the physical world, there was ordinarily no close relation between the acquiring of knowledge and the use of it in the process of production. The scientists

were not particularly concerned with the commercial value of their findings, nor were those responsible for directing business ventures especially interested in the ideas of scientists. During the last twenty-five years there has been a decided change. Business concerns are spending millions of dollars yearly in conducting scientific experiments for the purpose of acquiring knowledge as to how the process of production may be improved, and many enterprises consider their experimental laboratories the most vital part of their business. With the aid of such sciences as physics, chemistry, and biology the facilities for future production may be still further revolutionized.

*The Opposition to Capital.* Despite the rapid strides which have been made in the development of capital, most of this has occurred in face of considerable opposition. Even today many persons would deliberately curb the "capitalistic system." It is important in this connection to distinguish two ways in which production may be said to be capitalistic. In some instances the term refers to the indirect method of production. By this is meant the use of labor and resources for creating equipment through which the output of consumable goods may be increased. In this sense even Russia employs the capitalistic process of producing goods. In other instances the term refers to the system by which capital, or the instruments of production, is privately owned by persons who employ others to use it. It is not necessary to have the capital privately owned in order that there may be roundabout or indirect production of goods. This distinction is important in considering the criticisms of capital and the capitalistic system.

Only if work is preferable to more goods or to greater leisure can the indirect method of production be said to be unsatisfactory. If there is merit in compelling individuals to labor for the sake of labor there is no justification for using facilities by which the necessity for human labor is diminished. But if work is merely a means of furnishing the things which are desired, then there is no point in rejecting the use of capital. The assumptions which underlie this process are (1) that oppor-

tunities for consumption are preferable to work; (2) that these opportunities are limited only by the possibilities for production; (3) that production is restricted by human limitations; and (4) that capital tends to overcome these limitations. Incidentally it may be observed that only by the use of capital, in a country like the United States, is it possible to maintain the present population with its existing standard of living.

Granting that capital in itself may be beneficial, the way in which it is used may be injurious. Originally the individuals who produced tools used them in furnishing the goods which they wanted for consumption. Under these circumstances there was no opportunity for the capital to be disadvantageous to anyone. When specialization developed, the craft or trade worker still generally owned the tools by which he made a living. But when machine tools came into use individual workers could not afford to buy such expensive equipment even though it was highly efficient and a breach developed with some persons using machinery which others owned. The owners came to be in a position of dominating importance. Whatever course of action seemed advantageous to the owners was taken with little or no regard for the effect on the workers. Highly automatic machinery came to be installed without adequate provision for absorbing the displaced workers; moving conveyors used in an assembly line may drive workers at a pace which is injurious to their health. Serious as these conditions may be, they are not a necessary part of the indirect process of production. They arise mainly from the man-made arrangements of private ownership under which the capital is controlled. These arrangements can be extensively modified without any curtailment in the benefits of capital itself.

## II. TYPES OF CAPITAL

The term "capital" has no generally accepted meaning, but is used in a variety of ways. For present purposes the term refers to those goods which have been produced by past labor and are used for future production. It will, however, be help-

ful to consider the different types of capital which may be encountered.

*Producers' and Consumers'.* For some purposes it is convenient to consider capital as including all tangible goods which are in any way beneficial to producers or consumers. In cases of this kind capital includes any kind of tangible property, such as land, cattle, buildings, machinery, clothing, and house furnishings, etc. When things are used for the purpose of obtaining a money income, or its equivalent, they are called producers' capital. This would include land used for farms, factories, and office-buildings, as well as the structures themselves and the equipment used in connection with them. On the other hand, when these tangible things are used in such a way as to contribute directly to the pleasures and satisfactions of ultimate consumers, they are called consumers' capital. Thus a home and the land on which it is built are consumers' capital, as are also such things as pianos, radios, and washing machines, which are in possession of ultimate consumers. When, however, goods such as pianos and radios are in possession of retailers, wholesalers, and manufacturers the goods constitute producers' capital. In some instances a distinction between these two types of capital is difficult, if not impossible. An instance of this occurs with an automobile which a salesman uses for both business and pleasure, or with a house used partly as a home and partly as a store or office. Shoes and other clothing are usually considered as consumers' goods when they are in the possession of the persons using them, but in some cases they are really producers' capital, as with heavy work shoes and overalls. They, like the saw and hammer of the carpenter, are used in the process of producing other goods and are not wanted for any personal gratification which they furnish the users.

*Natural and Artificial.* Most generally capital refers only to the goods used in the process of production. But in this process both natural resources and man-made goods are employed. In some cases both of these are considered as capital, and a distinction is drawn between the capital which nature

furnishes and that which is furnished through human activity. The former is known as natural and the latter as artificial capital. It is goods of the latter type that we are considering as capital in this chapter. Regardless of whether natural resources are or are not designated as capital, the course of events has served to blur the distinction between those things which nature furnishes and those resulting from man's activity. In place of natural fertility is man-made fertility; in place of wild animals are those bred under the guidance of man; in place of the virgin forests are those deliberately planted; in place of the meandering streams and rivers are those which are deliberately guided by dikes and dredging; even oysters and fish are no longer products of nature alone but of man's deliberate efforts to create favorable breeding conditions; the land on which city homes are built is no longer a purely natural resource but has been improved by the construction of streets, sewage facilities, water lines, etc. Thus there has come to be an intermingling of human effort with the natural resources to the point where the line of separation for many purposes is far from distinct.

*Specialized and Unspecialized.* While all goods used in the process of further production are specialized as to their form, they may or may not be highly restricted as to their uses. Those forms of capital which can be used for a variety of purposes may be designated as being unspecialized. Basic raw materials tend to be in this group. Such products as petroleum, lumber, iron, and cotton can be shifted from one use to another. The same iron which finally emerges as a locomotive might have been converted into the girders for a building or into toys. As these materials begin their journey through the process of fabrication they generally develop into more specialized forms such as looms, vessels, factories, derricks, typewriters, and gasoline. Also among fabricated products which serve as capital there are wide variations in their degree of specialization. Some buildings can be used for a rather wide range of purposes such as offices, stores, or manufacturing, while others may be constructed for particular purposes such as grain ele-

vators. In any case the importance of the distinction between specialized and unspecialized capital lies in the ease with which it can be shifted from one line of activity to another.

*Fixed and Circulating.* Whether or not capital is highly specialized as to the purpose for which it may be employed, there are wide differences as to durability. Buildings and machinery are forms of fixed capital. Once they are acquired they give up their usefulness gradually as they wear out in the process of creating other goods. Thus they can be used repeatedly for the same purpose. But not so with coal. It can be used only once in that form and must be replaced; similarly with electricity and dynamite. Much the same situation exists with supplies of raw materials, whether the materials be the seeds which the farmer sows or the sand and other materials used in the manufacturing of glass. In a single performance their usefulness is given up and becomes embodied in other products. Thus there must be a flow or circulation of materials in order that production may be continued.

*Movable and Non-Movable.* While many forms of capital are capable of being moved from one place to another as convenience dictates, this is not the case with all kinds of capital. For either physical or economic reasons some types are quite incapable of being moved from their original location. This is conspicuously so with massive buildings, bridges, and machinery. Once these are constructed they are too large and too heavy to move intact, and cannot be dismantled satisfactorily. Consequently, such capital must be used where it exists.

*Private and Public.* When a distinction is drawn between private and public capital the basis of ownership rather than the nature of the capital or its uses is generally in mind. Post office buildings, highways, and municipal power plants, for instance, are no less capital because they are owned by the public collectively than if they were owned privately.

*Goods and Money as Capital.* Very frequently money is considered as capital. In a broad social sense money is a tool or device created by man for the purpose of facilitating trade

and is a type of capital. When money is viewed in this way it is helpful to distinguish between money-capital and goods-capital. The money-capital is used in large part to acquire goods of various kinds required in the productive process. Throughout the following analysis confusion will be avoided if capital is thought of as man-made equipment rather than as money.

### III. FORMATION OF CAPITAL

Since capital does not come into existence automatically, but as the result of deliberate choice and action, it is necessary to consider the circumstances under which it is possible for labor and resources to be used indirectly in the process of producing consumable goods. Here two seemingly contradictory steps are involved: saving and spending.

#### A. RÔLE OF SAVING

From earliest days down to the present, saving has been necessary in the process of creating capital. The nature of saving has shifted, however, under the influence of specialized production and the use of money. Whereas in earlier times the saving was largely, if not entirely, in terms of consumable goods, today the emphasis is upon the saving of monetary purchasing power.

*Saving Goods.* The early settlers in this country, much like primitive man, had three things at their disposal: time, their own ability, and natural resources. In attempting to get a living, time and energy could be applied to obtaining things which either were or were not immediately useful. Individuals could decide for themselves how their time and energy would be divided between furnishing consumable goods and creating capital, but they could not do both simultaneously. Hunting game and making a plow could not be done at the same time, nor could tilling the fields and building a house. There was some division of labor within the family, which permitted some members to be baking bread for family consumption while others in the family were building wagons.

The decision as to how time and energy were to be used, however, hinged largely upon the availability of consumable goods. As long as virtually all the time had to be used in furnishing the requirements for day to day living, there was little opportunity to divert effort to the creation of capital. But with the accumulation of a surplus of consumable goods over the immediate needs for existence, attention could then be turned to producing those things which would be of service in the future. Thus after the crops had been harvested, time and energy might be given to splitting logs for a rail fence by which cattle and crops would be protected, or to making a spinning-wheel, or perhaps a hayrake. Thus consumable goods tended to come first in point of time, and the creation of capital goods came second.

Under modern specialization a somewhat different situation exists. The production of consumers' goods and of capital goods is going on side by side. While farmers are cultivating their fields and harvesting their crops, manufacturing establishments, such as the International Harvester Company, are making tools and machinery for the use of farmers. And while rug manufacturers are making rugs, other manufacturers are making the machinery and equipment needed in the fabrication of the rugs. Thus capital is being created, not with spare time, but with the full time of those engaged in this specialized line of activity.

This shift from the diversified activity of the family to specialized activity of business enterprises did not alter the underlying importance of consumable goods. There had to be more consumable goods furnished than were consumed by those producing them. When workers are employed in constructing subways and furnishing the materials needed for them, they are not creating anything which they can use for the daily existence of themselves and families. Nor can these workers lay by a stock of goods which will sustain them until their efforts mature into a finished product which can be exchanged for consumable goods. Rather the workers are dependent upon others to provide currently for them such

consumable goods as food, clothing, etc. If consumable goods are so scarce that those providing them are able to obtain a better living than those providing capital goods, the latter will abandon the creation of capital and turn to producing consumable goods. Consequently the availability of commodities and services for consumption continues to influence the extent to which labor and resources will be shifted to or away from the production of capital.

*Saving Money.* As trade developed and the use of money increased, the nature of the surplus which individuals had to possess in order to obtain capital shifted from goods to monetary purchasing power. Instead of farmers making candles, buckets, milk churns, harness, etc., these things were purchased with the money obtained from selling other products. Individuals began to accumulate money rather than goods as a means of obtaining the capital goods they needed. This shift from saving goods to saving monetary claims to goods has now gone to a point where large stocks of consumable goods which formerly constituted a stimulus to the production of capital may now retard it. In agriculture the change is especially noticeable. Crops may be so abundant that, in the process of exchange, they yield insufficient income to permit even the use of equipment on hand, to say nothing of the replacement of worn-out machinery and the purchase of additional capital. During the depression of 1929 there was a noticeable shift from mechanical equipment to the use of animal power and hand labor. In some cases plowing was done with horses because farmers did not have money enough to buy the fuel and oil needed to operate the tractor they already possessed.

The funds required to finance the creation of new capital come through savings which may be either voluntary or involuntary.

(a) *Voluntary Savings.* Individuals have long been taught that it is a virtue to produce more than they consume; to spend less than they earn. Not infrequently they practice severe self-denial in order to save a part of their income. In an earlier chapter it was observed that specific provision has been made

to encourage savings through savings banks, postal savings facilities, insurance companies, etc. When persons of their own accord refrain from spending a part of their income for consumable goods their savings may be said to be voluntary.

The extent of voluntary savings cannot be estimated satisfactorily. Calculations of W. I. King indicate that ordinarily about 15 per cent of the national income is saved annually, and a recent calculation places the family savings for 1929 at about 18 billion dollars, or approximately 20 per cent of the national income. During the present century two circumstances have contributed to the growth of voluntary savings. First, the national income between 1900 and 1930 has increased faster than the population, thus increasing the per capita income. This at least makes possible a larger amount of savings without impairing customary standards of living. In the second place, there has been greater opportunity for saving on the part of the wealthy. It is well known that these individuals save a larger percentage of their income than do persons with smaller incomes, and during the decade 1919-29 the proportion of wealthy persons increased.

(b) *Compulsory Savings.* Funds for financing the production of capital may be obtained through compulsory savings. Such saving is not new, but its importance appears to have been increasing during recent years. Saving of this kind may occur through the reinvestment of business earnings, expansion of credit, or taxation.

(1) *Reinvested Earnings.* The reinvestment of business earnings has come to be largely a form of compulsory savings. With the individual proprietorship and partnership, the reinvestment of net income is distinctly voluntary. Much the same situation exists with family and other closely owned corporations. But quite a different situation exists with corporations whose stock is widely held by the public. In cases of this kind the decisions as to dividends often rest with the directors who own little, if any, of the stock. When such directors decide to expand the business and finance the expansion by retaining some of the earnings, which would otherwise go to

the shareholders, the savings are compulsory so far as the stockholders are concerned. The situation is not greatly altered when dividends are paid with stock rather than in cash. If, however, the dividend is paid in cash and the receivers of these dividends are then inclined to invest further in the enterprise, the financing of the enterprise is through voluntary rather than compulsory savings.

(2) *Credit Expansion.* It has already been noted that commercial banks are in a position to create credit which they loan to customers who use it as money in the buying of goods and the paying of bills. This power to create credit gives rise at times to the impression that savings are unnecessary when credit can be expanded. But such is not the case. Banks must have voluntary savings as the basis for creating their own credit, although a small amount of savings may serve as a base for a large amount of bank credit. So long as banks lend their credit merely to the extent that voluntary savings have been entrusted to them, the banks merely shift an existing quantity of monetary claims to goods furnished by the savers and wanted by the borrowers. But when banks create credit in excess of the voluntary savings there is an expansion in the quantity of monetary claims without a corresponding expansion in the volume of goods for which these claims are exchanged. Such expansion of credit operates to raise the price level and usually the prices for consumers' goods rise faster than wages. The result is that consumption is curbed, thereby enabling productive facilities to be shifted somewhat from the creation of consumers' goods to capital goods. Thus expansion of credit may create a type of forced savings which serves to shift purchasing power from consumers' goods to capital goods just as truly as though there had been increased voluntary savings.

(3) *Taxation.* When a government undertakes to create capital in such forms as highways, the funds may be raised through floating a bond issue, in which case voluntary savings will be obtained. But the funds may also be acquired through taxation. In this event individuals and business enterprises

alike are compelled to transfer some of their income to the government. The result, in so far as taxpayers are concerned, is the same as though there had been voluntary savings. Even borrowing is likely to involve forced savings in that taxation provides the usual means for repayment of the borrowed funds.

#### B. RÔLE OF SPENDING

Even though saving is necessary for the creation of capital, saving alone does not result in the creation of capital. In the first place, savings may be hoarded. In this case they become sterile and fail to function in the facilitating of trade. While hoarding is usually associated with the actions of individuals in hiding money or putting it in a safe deposit box, the result may be the same when banks sterilize funds in the form of excessive reserves, or when governments accumulate excessive quantities of gold which is not permitted to flow freely in the course of trade.

Likewise spending in itself does not create capital. Between 1919 and 1929 there was considerable growth in savings and the funds were not hoarded, but no conspicuous increase occurred in the amount of capital. During the period between 1919 and 1929 there were two conspicuous orgies of relatively unproductive spending. One occurred in real estate. Thus, in Florida the same land (sometimes submerged) was sold over and over again at fabulous increases in price. The other orgy occurred in the stock market. Here an increasing volume of paper, representing substantially the same productive facilities, was sold over and over again at an increasing rate and at rising prices. Whatever merit there may be in moderate speculation, these orgies served to restrain rather than stimulate the growth of capital.

It must also be realized that funds made available to business enterprises, particularly corporations, do not necessarily result in financing the creation of new capital. Corporations often issue new securities for the purpose of obtaining funds with which to pay off previously incurred obligations. Such securities are referred to as "refunding" issues. An instance of this

occurred during 1935 with a \$55,000,000 bond issue by the Anaconda Copper Company. It was reported that virtually all of this will be used to repay a bank loan. The prominence of refunding since 1929 is illustrated by Figure 30. The solid

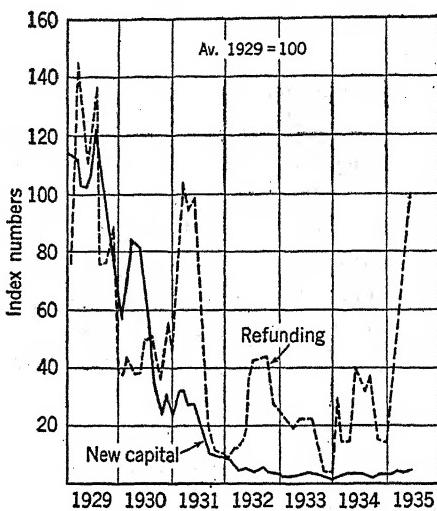


FIGURE 30. SECURITY ISSUES FLOATED, 1929-35

Reprinted from Cleveland Trust Company Bulletin.

line represents refunding issues. It will be noticed that since 1932 substantially all the securities floated were for the purpose of refinancing existing obligations, and this was conspicuously true in the early part of 1935. Reports for the first half of 1936 indicate that refunding was increasing much more rapidly than were issues for the creation of new capital.

*Business Spending.* In order that savings at the disposal of a business enterprise may serve to create capital, they must be spent for further commodities and services which will be useful in the process of production. This may be illustrated in the case of a company manufacturing valves used to control the flow of air, gases, and liquids. With a general expansion of business this concern finds that it has inadequate facilities to supply the requirements of its customers and decides to estab-

lish a branch plant. Funds to finance the expansion are obtained from an issue of bonds. Contracts are placed and expenditures made for a variety of things, including the construction of a factory, machinery to fashion the valves, and the purchasing of larger inventories of iron, brass, and other raw materials needed for plant operation. Some of the expenditures may not contribute directly to the creation of new capital. Among the equipment ordered there may be lathes, boring machines and drill presses which have already been produced in anticipation of sale. The purchase of these by the valve company reimburses the machine tool manufacturer and provides means by which he can finance the creation of more machines to await the call of customers. On the other hand, some of the machinery needed may not be in existence and is made in direct response to the ordering of it. Similarly, in the construction of the building some materials may be in existence already awaiting sale, others may be in the form of raw material inventories, which are fabricated to fill the order, and some may require the ordering of raw materials.

Whether or not the spending by the valve company takes off the market goods already produced or requires the creation of new capital, the funds start on a long and circuitous journey in the course of which they stimulate the production of capital goods. The funds which were spent by the company become a part of the operating income of the concerns from which the goods were purchased. This income in the case of each concern will be distributed in a variety of ways. Some is used in meeting payrolls, and some will be spent for the purchase of materials and the replacement of worn-out tools and equipment. This again serves to stimulate the creation of that kind of capital for which there is a demand. There may be bank loans which must be repaid, and in meeting these obligations funds are made available for lending to other concerns or for investment by the bank.

But before savings are even started on their journey there must be an incentive for their use. The mere availability of savings does not mean that they will be spent to finance the

creation of new capital. For the most part enterprises specializing in the creation of capital produce it for the purpose of sale. Consequently the prospect of profitable sale is an essential stimulus to their activity. Only through the sale of their products are the capital goods industries reimbursed for their previous spending. Most of the immediate stimulus to the current production of capital comes from industries engaged in the production of consumable goods. Consequently there is a close relation between the production of these goods and the production of capital. This relation, however, appears to be somewhat different from what it is often believed to be. In the first place activity in these two fields appears to move in the same direction, increasing and decreasing together. In only two of the fourteen years between 1919 and 1932 did the volume of these two types of production move in opposite directions. In one of these instances (1924) capital goods declined when the production of consumable goods increased slightly, and in the other case (1927) the output of consumable goods decreased, although the production of capital goods increased somewhat. In the second place, while production in both fields tends to expand and contract together, it appears that the production of consumable goods leads the way. In other words, a decrease in activity of consumable goods industries precedes a decrease in the activity of the industries furnishing capital goods, and an increase in consumable goods' production precedes an increase in production of capital goods.

*Consumers' Spending.* Until comparatively recent times the spending by business enterprises was considered much more important to the creation of capital than the spending of consumers. Consumer spending was viewed as a necessary evil rather than an essential part in the process of creating capital. The more the public saved, the more capital would be produced. Whatever the historical justification may have been for this view, its validity is questionable under the mechanism by which modern trade is conducted. This does not mean that saving has ceased to be important in financing the production of capital, but merely that consumer spending also plays a vital

and indispensable part in the process by which capital comes into existence.

At the outset it is essential to realize that increased consumption is the reason for the roundabout method of production. Increased quantity, better quality, and greater variety of goods are possible only through the use of capital. But the indirect process of production does not provide a mechanism by which either potential or actual output is made available to the consuming public. Under existing conditions of specialization and exchange, consumers obtain most of the things they need and want by spending the money incomes received in the form of wages, interest, dividends, etc. Consequently, increased consumption depends upon consumer spending.

Not only are the expenditures of consumers essential for them to derive most of the benefits of capital, but without their spending it is impossible for the industries producing capital goods to operate. While the demand for capital does not come directly from ultimate consumers, it comes indirectly by way of the industries using capital in furnishing such consumable goods as food, clothing, homes, and entertainment. The producers of these are anticipating the spending of consumers. If the spending equals or exceeds expectation, the producers will be encouraged to expand their production of consumable goods and increase their demand for capital. If, however, spending falls below expectation, there is curtailed output and a diminished demand for capital.

Indeed, there appears to be an extremely sensitive, even though indirect, relation between consumer spending and the production of capital. A comparatively small change in final consumption is relayed into a very considerable change. An increase of 5 per cent in consumer buying may be sufficient to stimulate optimism of retailers, who expand their orders to wholesalers by 10 per cent in order to meet future needs. Wholesalers must anticipate the needs of their customers still further in advance, so that they may increase their orders to manufacturers by 20 per cent. The manufacturers in turn generally must anticipate business still further than the

wholesalers, with the result that their orders of raw materials may expand by 30 per cent or more. On the other hand, a small decline in buying by ultimate consumers can start the spiral in the other direction, and the decreases in orders become proportionately greater as they pass from retailer to wholesaler, to manufacturer of consumable goods, to producers of capital goods.

In addition to the influence of consumer spending as a stimulus to the creation of new capital, such spending may also be the source of funds to finance the creation of new capital. Whether or not consumer spending finances the expansion of capital depends upon the relation of costs to selling prices. If the prices charged merely cover the necessary costs, including a reasonable return to the investors, the consumers do not furnish funds for the creation of new capital. Their spending merely provides for replacement of the capital used in producing the goods they are buying. This is not so, however, when selling prices exceed necessary costs by a wide margin, as is generally the case with monopolies. The surplus income is, in effect, a type of savings forced from consumers by charging more than costs of production warrant. In so far as such income is reinvested in the enterprises, the consumer finances the creation of additional capital, but without the usual benefits which come to investors. Even if the surplus income is not reinvested in that particular business, it is likely to be distributed to management and investors whose income in large part is invested rather than spent for consumers' goods.

During the period immediately prior to the depression of 1929 there was an abundant opportunity for the expansion of capital through forced savings of consumers. According to estimates of Doctor Mills,<sup>1</sup> the production of manufactured goods (both capital and consumable) was 37 per cent higher in 1929 than in 1922, while profits were 84 per cent greater and prices only 2 per cent lower. During this same period, output per man-hour increased about 30 per cent and labor costs declined approximately 14 per cent on the average, although

<sup>1</sup> Frederick C. Mills, *Economic Tendencies in the United States*, pp. 268-80.

hourly earnings increased only 8 per cent (between 1923 and 1928) according to calculations of Doctor Paul Douglas.<sup>1</sup> Thus the benefits of increased efficiency took the form of profits rather than decidedly higher wages or materially lower prices. That these profits actually went mainly into speculation instead of production does not alter the fact that the profits might have been used to finance new capital.

*Government Spending.* There is widespread belief that funds acquired by the government disappear in some mysterious fashion and do not serve to aid business in general and the creation of capital in particular. While private business has no monopoly on wasteful spending, government outlays flow through substantially the same channels and have a similar influence to that of private spending. When governmental agencies undertake the construction of roads, bridges, tunnels, and buildings, the spending results in the creation of new capital. Then, too, these agencies constitute a market for huge quantities of privately produced capital in such forms as trucks, airplanes, desks, typewriters, filing cabinets, etc. Funds in the possession of governmental bodies are also disbursed in the form of interest on bonds, wages to employees, rentals for property, and subsidies for various purposes. These disbursements, like those of private enterprises, are received by persons who in turn either spend the funds for consumable goods and thereby create an indirect demand for capital goods, or they save the funds and thus make possible a larger supply of capital goods.

In times of emergency, governmental agencies engage in extraordinary spending which may also contribute to the creation of capital. Under some circumstances, as with war, the capital goods industries may be stimulated at the expense of industries furnishing consumers' goods. The curtailed consumption may result from greater taxation, borrowing or credit expansion, while the stimulus to further production of capital goods comes through the increased spending of the government for military equipment such as vessels, aircraft,

<sup>1</sup> Paul Douglas, *Controlling Depressions*, p. 55.

guns, and ammunition. With the peace time emergencies of the business depression variety, the situation differs in that industries specializing in the production of consumable goods as well as those furnishing capital goods require stimulation, and the latter cannot be stimulated at the expense of the former. Here also government spending may play a constructive part.

When government spending is designed to revive private business, the expenditures may be made in either of two ways or by a combination of them. Public works projects requiring large expenditures for capital relative to wages may be undertaken with a view to placing funds in the hands of business enterprises through which they will be distributed presumably in the form of wages, interest, etc., thereby giving the masses of the population increased purchasing power for consumable goods. With increased consumption there would be further stimulus to the capital goods industries. Or the government might spend its funds for projects requiring much labor and comparatively little capital. In this way the original stimulus comes mainly through consumers who by spending their wages for consumable goods not only stimulate these industries but also the industries providing capital goods. Or, the government may operate in both ways simultaneously, as in the depression of 1929. The Public Works Administration undertook the financing of permanent improvements requiring relatively large amounts of capital, whereas the Works Progress Administration engaged mainly in financing projects which required much labor and little capital. Thus the former stimulated the flow of funds from business enterprises to ultimate consumers while the latter increased the flow from ultimate consumers to business enterprises.

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Capital has come to be an indispensable factor of production. It has already contributed to higher standards of living than would have been possible without it, and even higher standards are possible if it is used more fully with a view to benefiting society as a whole. Under a system of specialization the production of capital and that of consumable goods occur simul-

taneously. The extent to which effort is directed to the production of capital is determined in part by the availability of savings with which to finance its creation, and partly by the spending for consumable goods which require capital in the process of their production.

### QUESTIONS

1. "With the advent of capital, resources came to be used indirectly." Evaluate this statement.
2. "Man's control over nature was greatly increased with the advent of mechanical power." Explain.
3. Point out some of the ways in which the machine had far-reaching economic effects.
4. What accounts for the late application of science in business?
5. In what respects may production be said to be "capitalistic"?
6. "Criticisms of the capitalistic system often fail to distinguish between the potential and the actual use of capital." Explain and criticize this statement.
7. Distinguish between producers' and consumers' capital.
8. "There is no sharp line of distinction between natural and artificial capital." Explain.
9. Distinguish between specialized and fixed capital.
10. In what sense, if any, can money be said to be capital?
11. "Saving is essential for the creation of capital." Explain.
12. How, if at all, does modern saving which gives rise to capital differ from that of earlier times?
13. Distinguish between voluntary and compulsory savings.
14. "Reinvested earnings are necessarily compulsory savings." Evaluate.
15. Explain how credit expansion may involve compulsory savings.
16. "Spending in itself does not create capital." Explain and indicate some of the ways in which spending may make little, if any, contribution to the creation of capital.
17. "Under modern specialization the production of capital and of consumable goods are so completely separated that activities in these fields are largely independent of each other." Criticize.
18. "The purpose of the roundabout method of production is to create more jobs." Do you agree? Give reasons.
19. Why is consumer spending so important in the creation of capital?
20. "Government outlays flow through substantially the same channels and have substantially the same influence on the creation of capital as does private spending." Explain how, if at all, government spending can serve in the creation of capital.

## CHAPTER XIII

### LABOR

HUMAN beings play a double rôle in economic life. In one they are consumers. This is their oldest rôle and the one in which they are supreme. Despite many indications to the contrary, the fundamental justification of business activity is to serve the consumer-king. At the same time individuals are essential instruments in the process by which they are served. As such they are acting in the rôle of producers. It is in their capacity of producers that our interest centers at present.

The exertion of human energy comes in response to different incentives. Sometimes individuals do things for the sheer joy of doing them, as is often the case in painting pictures, helping the needy, or playing golf. Delightful as it may be for individuals to expend their energy in doing the things they enjoy, there are likely to be other motives also. The necessity for making a living usually creates the dominating incentive. Some few individuals are able to make their living doing the things which appeal most to them and for which they are peculiarly well fitted. This ideal arrangement, however, is not yet available for the bulk of the population. They must accept the employment they can find, whether or not it is enjoyable and utilizes their individual abilities most advantageously.

When human beings are viewed as instruments of production, it will be helpful to consider labor as energy expended not for its own sake but in expectation of other benefits, usually money income or its equivalent. Thus the purpose of the activity, rather than the nature of it, determines whether or not it constitutes labor. A sculptor making a statue of his dog for his own enjoyment is not performing labor, while if the statue is for the purpose of sale the activity constitutes labor.

## I. SOURCES OF LABOR

## A. POPULATION

*Size.* The population of the world in 1930 was estimated<sup>x</sup> as roughly two billion people. These people were distributed very unevenly among the countries of the world, as indicated by Figure 31. Nearly 75 per cent were living in ten countries, with the remainder divided among some ninety or more other countries. The United States ranked fourth in size, with roughly 6 per cent of the world's population.

*Growth.* During the past century the population of the world has grown by leaps and bounds. It has been estimated that in the year 1700, after probably five thousand centuries, there were five hundred million people on the earth. During the next hundred years the population was gathering momentum and increased by about one hundred million. But in the succeeding generation, or between 1800 and 1900, population burst forth with an increase of about nine hundred million, bringing the total to about fifteen hundred million as shown by the left-hand diagram of Figure 32. Since then the growth has been more rapid. Between 1900 and 1930 there was an increase of about five hundred million. This increase during approximately a third of a century was equivalent to the entire population in 1700 after thousands of years of growth.

In the United States the population has grown even more rapidly. By comparison with it, world population has been almost standing still, as is suggested by the right-hand diagram of Figure 32. While the world's population was growing two

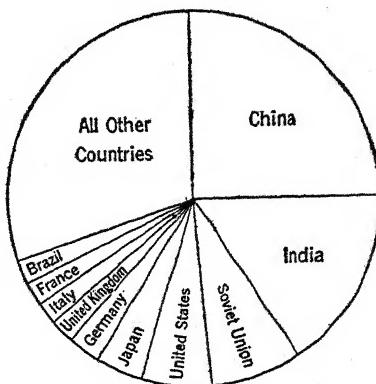


FIGURE 31. DISTRIBUTION OF WORLD POPULATION AMONG LEADING COUNTRIES

<sup>x</sup> *Commerce Yearbook, 1930, vol. II.*

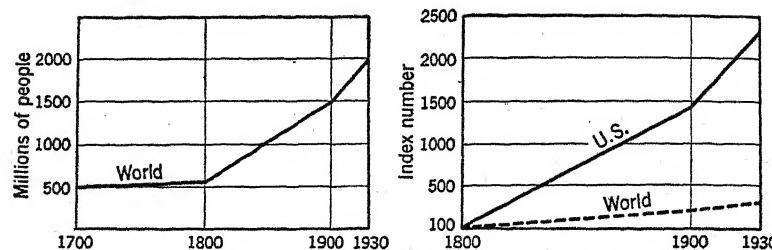


FIGURE 32. POPULATION GROWTH OF UNITED STATES AND WORLD  
World estimate from *World Population Problems and a White Australia*, by Wilkinson, published by P. S. King and Sons, London, 1930.

and one half times during the past century, there was a fourteen-fold increase in the United States; and in the thirty years of the present century, domestic population increased by two thirds as against one third for the entire world.

While domestic population is continuing to increase, its rate of growth is diminishing. During somewhat less than a century and a half, between 1790 and 1935, population increased from almost nothing to about 127,000,000 in 1935. But for a number of years the rate of growth has been declining, as is indicated by the lower diagram of Figure 33. Each ten years or decade during the earlier part of the period brought forth an increase of about 35 per cent in the population, whereas the rate fell to 15 per cent between 1920 and 1930. On an average annual basis, the decline was approximately from 3.5 to 1.5 per cent. Since 1930 the rate has continued to decline, and between 1934 and 1935 the population increased by approximately only 1 per cent.

A stationary population seems probable for the United States in the not far distant future if present tendencies of population growth continue. The broken lines of Figure 33 are estimates of the population growth for some years to come. How large the maximum population will be and how soon the upper limit will be reached cannot be foretold with precision. Estimates of the probable limits have been as high as 190,000,000 and as low as 145,000,000. It is believed by many that the actual number will be closer to the lower than to the upper

figure. If such proves to be the case many persons now living will see the advent of a stationary population.

*Births and Deaths.* Changes in the natural growth of population represent, of course, the net influence of two opposing forces — births and deaths. In the United States, as in most other countries, births exceed deaths, with the result that population increases. But even with this excess there may be a decline in the rate of population growth. The particular circumstances which have caused the growth of population to slacken its speed in the United States have been declining birth and death rates, with the birth rates falling faster than the death rates. In 1925, for every 1000 people there was an average of 25.1 births as against 14.1 deaths. By 1932, both rates had declined, but births had fallen to 17.4 and deaths to 10.9, giving an excess of only 6.5 births over deaths per thousand population. Thus within a relatively short span the excess births declined from 11.0 to 6.5 or by nearly a half. It is the persistence of this tendency which is expected ultimately to bring a stationary population with births just about equal to deaths. If the tendency continues beyond this point there will be an absolute decline in the actual size of the population, as has occurred in France.

The declining birth rate reflects partially the decreasing economic worth of children. When the country was predominately

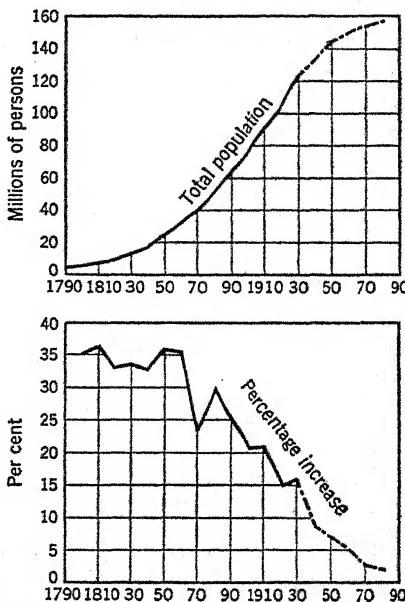


FIGURE 33. PAST AND ESTIMATED FUTURE GROWTH OF UNITED STATES POPULATION

Reprinted from *Recent Social Trends in the United States*, Report by the President's Research Committee on Social Trends; by permission of the publishers, McGraw-Hill Book Company, Inc.

agricultural, with a shortage of man-power, there was a strong economic incentive to have large families. Within a very few years after birth, children could do chores around the farm. Before long they could do more strenuous work and still further increase the output of the farm. Finally, the children would operate the farm and care for the aged parents. With the shift from agricultural to industrial life, and with the increased mechanization of both farms and factories, the opportunities for child labor diminished. Children could ride horses during the plowing season but they could not operate tractors; they could be used in the breaker-houses of mines when the sizes of coal were graded by hand, but they were not suited to control the machinery used for mechanical grading. Then, too, compulsory education came into the picture, as did child labor laws. Both tended to reduce the opportunity for child labor and at the same time increase the financial obligation of parents for feeding, clothing, and otherwise supporting the children for perhaps fifteen years. After the children became of working age they drifted to the cities, where they became industrial workers. Consequently, children became economic liabilities rather than assets. As this condition develops, the economic incentive to have large families diminishes. A counterpart of the tendency in the United States is found in Europe, for a survey of these countries indicates a decided tendency for the population to increase more rapidly in agricultural than in manufacturing nations. The rate of growth is notably higher in Russia, Lithuania, Poland, Rumania, Bulgaria, Portugal, Spain, and the Netherlands than in England, Germany, and Austria.

*Age.* Not only is the population of the United States increasing in size but it is also increasing in age. Older persons constitute a larger percentage of the total than formerly. In 1850, about 52 per cent of the population was made up of young people under 20 years of age, while in 1930 this group declined to 39 per cent; the group between 20 and 50 years increased from 39 to 44 per cent, while those over 50 nearly doubled, increasing from 9 to 17 per cent. Moreover, it is likely that this tendency will continue until a stationary population is

reached. Thus the nation is experiencing an ageing population from which its future labor supply must be drawn.

#### B. IMMIGRATION

In addition to births, there is also immigration as a source of labor for any nation. Man has always moved about more or less over the surface of the earth, but not until the last century was there mass migration. Prior to the Napoleonic Wars, migration from one area to another was mainly to acquire new territory. Expeditions were organized by govern-

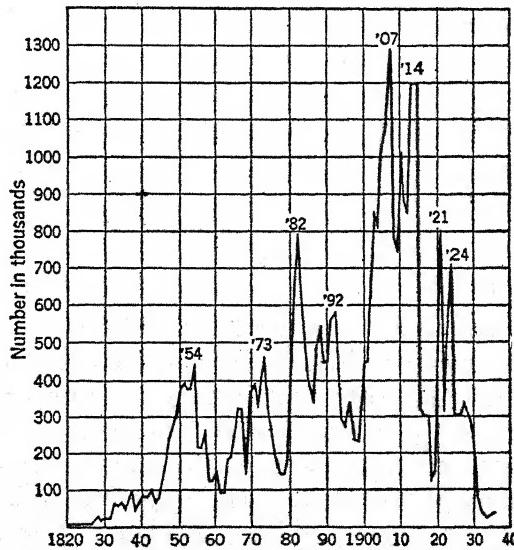


FIGURE 34. IMMIGRATION TO THE UNITED STATES  
From *Annual Report of Commissioner General of Immigration*.

ments or with their aid. The Treaty of Paris, which brought the Napoleonic Wars to a close, established fairly well the territorial possessions of European countries for many years and thus diminished the opportunity for governmentally organized expeditions. With the breakdown of the feudal system, and the virtual elimination of serfdom on the one hand and the existence of economic, political, and religious pressure on the

other, individuals attempted to improve their conditions by leaving their home countries.

For many years there was a rising tide of immigration to the United States. The inflow was not regular, but came in wave-like movements, rising to an ultimate peak of 1,300,000 in 1907, as shown by Figure 34. While this was only a part of the shift from the Old to the New World, it was the largest part. There were smaller waves to Canada and South American countries.

In more recent years the United States reversed its traditional policy of the open door and has virtually closed its door to immigration. The World War almost eliminated immigration for a time. After the conflict a new wave developed which was rather promptly checked by legislation. Instead of admitting any number that met certain minimum qualifications, the inflow was limited to about 150,000 in any one year. In 1931 further restrictions were imposed in view of the widespread unemployment in the United States. All immigrants were barred who were "likely to become public charges." Since nearly all were in this class by virtue of the unemployment of the domestic population, the inflow dwindled to about 30,000 in 1934.

The reversal of the traditional immigration policy reflects changed economic conditions. Formerly there was a distinct shortage of man-power in relation to the resources which were to be developed. People from foreign countries were welcomed to help explore, settle, and develop the country. The early inflow was mostly from northwestern Europe, and the immigrants, a rather self-reliant group, tilled the soil or followed the crafts with which they were familiar. Later the inflow shifted and came from the countries of southeastern Europe. These immigrants were mostly of the common laboring type seeking to become employees. They were found in large numbers where arduous hand labor was required, as in the laying of railroad tracks, or working in the pits of steel mills and coal mines. With the more advanced development of resources, and the increasing mechanization of productive activity, the need for this type of labor declined. Not only had many craft activities been shifted from the home and small shops to the fac-

tories where the craftsmen were employees rather than self-employers, but with the advent of machinery and task specialization, many of them were forced into relatively unskilled work. Here they came into direct competition with the common labor group from foreign countries. In the meantime the strength of organized labor had been increasing, and they were urging restrictions on immigration when the World War automatically cut off the inflow. When the influx started anew, the country was in the midst of a post-war depression in business activity. Many former soldiers were unable to find work upon their release from military service. They joined organized labor in fighting for restrictions on immigration. Many employers were also in favor of restriction, at least until native workers could find jobs. Under these circumstances the traditional immigration policy of the country was reversed.

## II. UTILIZATION OF LABOR

In the utilization of labor four circumstances influence the productivity of goods. These are the number of workers, their efficiency, the working time, and the conditions under which they work. In a broad sense the first three of these may also be said to determine the supply of labor in general, and the fourth may influence the supply in particular instances.

### A. NUMBER OF WORKERS

It has already been noticed that not all human activity constitutes labor. Only that undertaken for the purpose of obtaining money income or its equivalent in the process of trade falls under this concept of labor. When individuals are performing services under these conditions they are said to be gainfully employed or to be engaged in gainful occupations.

*Unemployed.* From this trading standpoint over half of the population at any time is unemployed. These individuals fall roughly into two groups. Some are not engaged in gainful occupations through choice and others through necessity. The unemployment of the former may be considered as voluntary and that of the latter as forced.

The voluntarily unemployed are in this class for widely different reasons. A very large proportion are not idle but are engaged in doing housework as members of a family. If employment were not considered in terms of trade these individuals would be among the employed from the standpoint of rendering useful services. There is also a considerable number who are employable but are not engaged in gainful occupations because they are voluntarily attending schools and colleges. There are some in the unemployed group who have retired and are living on their wealth. Finally there are those to whom begging is more attractive than work. This group is negligible in size.

Forced unemployment may arise because individuals are either permanently or temporarily unemployable. In some cases they are not physically able to perform work. At both ends of the life span physical incapacity is pronounced, and in between there are those who are unemployable through sickness or accident. The incapacity of youth is temporary, but that of old age is permanent. In addition to physical incapacity there are legal restrictions which at times prevent gainful employment. These restrictions are encountered by children below working age and also by females in some occupations.

The most serious unemployment is the enforced idleness of the employable group. Seasonal conditions have always given rise to some enforced idleness, and in some industries it is especially severe. Of more general importance is the unemployment occurring with the down-swing of the business cycle. With the increasing use of machinery there has developed a type of unemployment which is more or less independent of seasonal and cyclical swings in production. This is called technological unemployment because it arises from changes in the technique or method of producing goods. Since these changes in technique do not occur periodically but are being made constantly, they tend to be a continuing source of unemployment. It must not be assumed, however, that this constant displacement of particular workers necessarily means a constantly increasing amount of permanent unemployment.

The importance of enforced idleness depends somewhat upon

both the number of individuals unable to find jobs and the period during which they are compelled to be idle. On both points there is a conspicuous lack of adequate information. Various estimates have been made as to the extent of unemployment. During the thirty years between 1897 and 1926, Doctor Paul Douglas has estimated an average of 8 per cent for industry as a whole. For the distinctly mechanical industries of manufacturing, construction, mining, and transportation, the average for the period is estimated at 10 per cent with a minimum of about 6 per cent in any year. In periods of depression, however, the unemployment in these industries has run as high as 23 per cent. In 1926, a year considered to be normal, it was 7.5 per cent. During the period as a whole, Doctor Douglas found no definite tendency for unemployment to increase or decrease.<sup>1</sup> This is particularly significant as suggesting that technological changes did not permanently increase the degree of unemployment. During the 1929 depres-

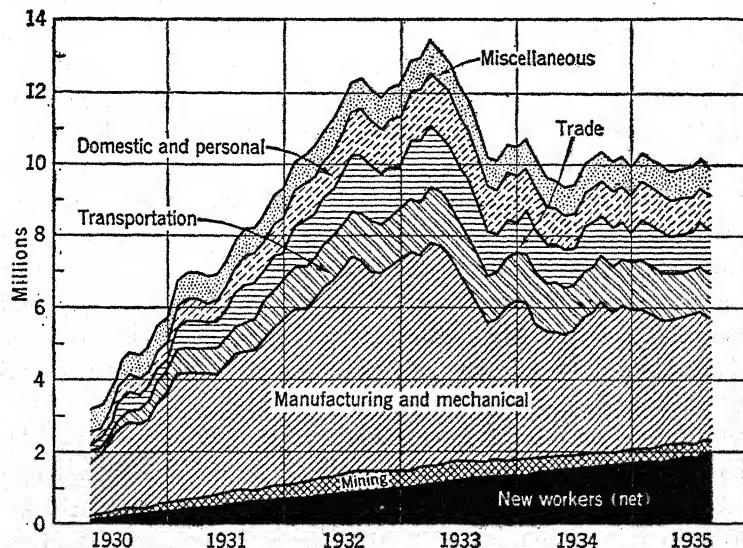


FIGURE 35. UNEMPLOYMENT BY INDUSTRIES

Reprinted by permission from *Business Week* and based on data of the National Industrial Conference Board

<sup>1</sup> Douglas and Director, *The Problem of Unemployment*.

sion, the number of unemployed was estimated to be between 2,000,000, and 17,000,000. An estimate by the National Industrial Conference Board is shown in Figure 35. From about 3,000,000 in 1930, the army of unemployed increased to about 13,000,000 by early 1933, and then declined to about 10,000,000 in the middle of 1935. Estimates for early 1937 place the figure between 8,000,000 and 9,000,000. Even less satisfactory information exists as to the duration of unemployment for individual workers, although increasing attention is being given to it, especially in connection with unemployment insurance plans.

*Employed.* Attention may now be shifted from those who are unemployed for any reason to those who would ordinarily constitute the gainfully employed portion of the population. These are estimated to have been 51,000,000 in 1935 and were about 40 per cent of the entire population, or about 50 per cent of those over ten years of age.

(a) *Sex.* This working population is composed of nearly 4 males for every female, as indicated by the left diagram of Figure 36. Their relation is, however, in the process of change. Using the year 1800 as a basis for comparison, women workers have been increasing in number at a more rapid rate than men. In 1930 there were about four and one half times as many females and only two and one half times as many males engaged in gainful occupations as in 1880. While male workers predominate in most lines, there are some lines in which they do not. Females are distinctly in the lead in domestic and personal services, about tie with males in clerical positions, and number only slightly less than males in the professional and semi-professional activities.

(b) *Age.* Nearly half of the workers are in the prime of life, being between the ages of 25 and 44 years as indicated in right-hand diagram of Figure 36. About 25 per cent are considerably past the midway point, being between 45 and 64 years, while 20 per cent are between 18 and 24 years. Extreme youth and extreme old age are about evenly balanced,

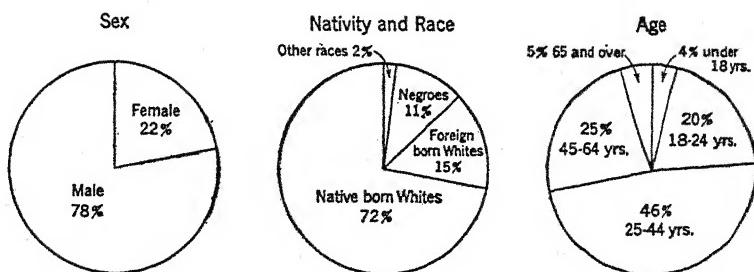


FIGURE 36. CHARACTERISTICS OF THE GAINFULLY EMPLOYED POPULATION

5 per cent of those in gainful occupations being 65 years or more in age and 4 per cent being under 18 years. In a physical sense an adult is one who has attained full size and strength, but the age at which individuals become adults in an economic sense varies widely as between occupations. Serving or selling newspapers, for instance, can be done successfully at an age of 10 years or less. If persons of 15 years or less are considered as children there has been a distinct tendency for the number gainfully employed to decline since 1919. They numbered about 700,000 in 1930, as compared with 1,100,000 in 1880.

(c) *Nativity and Race.* The native-born white population furnished about three out of every four workers as indicated by the middle diagram of Figure 36. Foreign-born workers accounted for 15 per cent, with Negroes 11 per cent and other races 2 per cent of the total.

#### B. WORKING TIME

The quantity of labor service which can be obtained at any given time is dependent not only upon the number of workers but also upon the period of time during which they work.

*Working Life.* It is customary to think of working time as hours per day or days per week. But for some purposes it is necessary to consider longer periods, such as the duration of the working life. More attention has been given to extending the span of physical existence than to extending the span of economic existence. Through the advance of medical science the period over which the bulk of the population is consuming has

been increasing. But the period of their producing life has been declining. The decline has come about partly through increased time required for voluntary and compulsory education and partly through earlier arrival of economic old age. The preference for younger workers in even skilled occupations is suggested by the fact that in a period of active business, the average age was only 33 years for nearly 1000 operators of standard machine tools in metal manufacturing plants in Philadelphia. Less than 10 per cent of the workers were over fifty years of age. The span of working life may also be curtailed through disease and accidents of an industrial character.

*Working Week.* Not only has there been a tendency to a reduction in the span of working life but also in the duration of the working week. The long hours which agricultural activity originally demanded were adopted by industrial enterprises when production shifted from the farm to the factory. For many years a 12-hour day for at least six days a week was not unusual as the basic time. Such intensive use of labor has been declining, especially during the present century. In 1909, about 70 per cent of the factory employees worked 54 hours or more a week, while about 15 years later this was the case with slightly less than 25 per cent. During the same period the proportion working 48 hours or less increased from 8 to 46 per cent. In the interval between 1923 and 1929, there appears to have been virtually no change, as indicated by Table 8. But since 1929,

TABLE 8. BASIC HOURS PER WEEK IN MANUFACTURING INDUSTRIES

Basic Hours per Week	Employees		
	1909 (per cent)	1923 (per cent)	1929 (per cent)
48 hours or less.....	8	46	46
49 to 60 hours.....	53	45	46
60 hours and over.....	39	9	8
	100	100	100

Source: Census Reports

there has probably been a reduction in the basic week. During the depression of 1929, both organized labor and the government exerted pressure for a work week of not over 40 hours. Such a work week has also been endorsed by the League of Nations Labor Board. In some instances the basic week has been reduced even further, as with the Kellogg Company, which has adopted a 36-hour week without pay cuts.

There have also been some reductions in the number of days per week. As yet most of the reductions have been from 6 to  $5\frac{1}{2}$  days. There is increasing agitation for a basic 5-day week, but there has been no widespread movement in this direction. A survey made by the United States Bureau of Labor Statistics in 1931 showed that out of 37,600 establishments, with nearly 4,000,000 workers in 77 industries, the 5-day week existed in only 1.8 per cent of the establishments, covering 5.6 per cent of the workers. The industries leading in the shorter work week were automobiles and women's clothing, the former distinctly ununionized and the latter highly unionized.

*Working Day.* From the 12-hour day there have been gradual reductions in the standard day. Excluding Saturdays, for which special arrangements are often made, the daily hours tended first to 10 and then to 8. There has been pressure in some industries for a further reduction to 6 hours, and this may come to be the basic work day. While the daily hours have tended to decline, there has been increasingly intensive utilization of workers while employed. As a means of stimulating daily production, some concerns have employed various devices. Some have found that in repetitive work music has a stimulating influence and have provided it in their workshops. Experience has shown that with the persistent use of a few muscles in rapid and highly repetitive work fatigue develops rather quickly. When this occurs output is diminished, spoilage increases and mistakes grow. By providing periodic rest periods the body is given an opportunity to rebuild worn-out tissues and restore energy. For maximum output the number and duration of such periods vary with numerous circumstances,

and the arrangements can be determined in any particular case only by careful study.

The extent to which it is advantageous to go in reducing hours per day, and even days per week, depends upon the point of view from which the advantages are judged. Under some circumstances, and within limits, reductions may be advantageous to employer, employees, and society alike. But under other circumstances and beyond certain limits, mutual advantage ceases and conflicting interests show themselves. From the standpoint of competitive business the immediate consideration is that of costs. Viewed in this way alone, reductions in working time are desirable only as long as they actually reduce unit costs of output. While there are possibilities of this kind they are not ordinarily so great as is often assumed. When, however, the interests of employees are considered, it may be desirable for working time to be reduced despite increases in costs. If in a few years of intensive work an individual becomes a physical and nervous wreck, he ceases to be a useful instrument of production. An even broader social view would require that individuals be considered not only as instruments of production, but as human beings. Despite a widely held view that the purpose of production is to furnish work, the real purpose is to furnish opportunities by which individuals can live a more abundant life. As increased facilities for production develop, individuals may prefer more leisure to more goods, in which case there would be justification for decreasing working time even though production costs increased.

#### C. EFFICIENCY OF WORKERS

The supply of labor services depends not only on the number of workers and the time they are employed but also on the efficiency of the workers in performing their jobs. Among individuals doing the same type of work, with the same facilities and under the same conditions, there are variations in their output. Among typists doing straight copying, for instance, there will be wide variations in the speed with which the copy-

ing is done. There will also be variations in the quality of the work. A smaller group of highly efficient workers can accomplish more in a given time than a larger group of less efficient ones. When occupations are performed by hand, with little fixed capital required, the speed of workers is of slight importance. Slow and fast workers can be used equally well, as in the case of cranberry picking. Variations in speed are adjusted through payment according to results rather than time consumed. But when there are heavy investments in fixed capital, fast workers are distinctly preferable to slow ones, and concerns often prefer paying higher rates to speedier workers than lower rates to slower workers because the faster workers make possible more efficient use of the machinery and other fixed capital.

#### D. WORKING CONDITIONS

Along with the capacity of individuals, the conditions under which they perform work influence the amount of production which can be obtained. Mention has already been made of the importance of workers and jobs being adjusted one to the other. This was referred to as getting square pegs in square holes and round pegs in round holes. The mere fact that an individual is performing a job well does not mean that the worker's services are being performed most effectively. Only when jobs call for the particular combination of talents which individuals possess are they likely to enjoy their work and render their best service. Then, too, the physical conditions under which people work and the facilities at their disposal have a direct bearing on the service they can perform. Just as it is possible to do more with tools than without them, so greater production is possible with good tools than with poor ones. A well-laid-out factory permits a more rapid flow of work than one in which much time and energy are wasted in carrying things back and forth. Careful planning of work eliminates the loss of workers' time in waiting for materials, tools, and instructions. Through systematic arrangement of tools in assembling the parts of textile machinery one concern experienced an increase of 100

per cent in the output per worker. At one time no particular attention was paid to proper lighting and ventilation of work-places, nor to the elimination of noise, even though they were capable of increasing the quantity and quality of work performed. Similarly the use of adjustable benches and chairs serves to eliminate unnecessary fatigue and thus conserve human energy for productive work. The importance of working conditions came to be emphasized with the advent of scientific management, which will be considered in the following chapter.

#### E. MOBILITY OF WORKERS

Finally, the utilization of labor is affected by its mobility. Employers do not want labor in general but workers with particular qualifications, and workers do not drift into jobs in the same indiscriminate fashion that cattle may wander into the stalls of a barn. The quantity of any kind of labor needed in different branches of production and among different employers and places does not remain the same. Changing conditions require that there be some mobility of labor as between lines of work, employers, and places. Only in this way can workers be so distributed as to be used most advantageously for their own benefit and that of society. The promptness and ease with which mobility occurs are influenced by a number of circumstances.

*Specialized Ability.* The earlier consideration of occupational specialization indicated that there is not free-for-all competition among all workers for any particular kind of work. Most of those qualified as plasterers are not available for plumbing jobs; those prepared to practice law are not available for the practice of medicine; tool-makers cannot be substituted for cabinet-makers. Any extensive shifting from one type of work to another requires a period of time. Assuming adequate natural ability for a given kind of work, time is needed to acquire specialized training and experience. This may be less than a week, as with unskilled tasks, or may require years, as in some of the trades and professions. Some indi-

viduals have basic training in several lines and can shift more easily than can those with more limited training. Ordinarily there is no considerable proportion of such borderline workers in skilled occupations.

In view of these differences in requirements and abilities for particular occupations, it is not surprising that a labor shortage and unemployment may exist side by side. Even though increased use of automatic machinery has required more labor in designing and constructing such machinery, the workers displaced by the installation of machines cannot immediately turn to fill the increased jobs available in furnishing the machinery. The occupational requirements in designing machinery are usually quite different from those necessary for operating it.

Names of occupations are often very deceptive as to the qualifications needed for performance of the work involved. This is notoriously so with the occupation of clerk. The girl behind the counter of a five-and-ten-cent store who ordinarily does nothing more than receive small amounts of money, make change, and wrap articles selected by customers is called a clerk as well as the certified public accountant. But the names by which occupations are known has nothing to do with the mobility of workers, except in some cases where an official title increases the attractiveness of a job.

*Lack of Contact.* The mobility of labor is also curtailed by the lack of contact between available workers and jobs. If the most satisfactory and economical distribution of labor is to be obtained, workers must have knowledge as to available work. Only recently have steps been taken to provide facilities to meet this need. The Federal Government is developing a nation-wide system of employment exchanges, the services of which will be free to both employers and workers. Private agencies have aided in the past, but in addition to other circumstances their opportunities for service were frequently restricted by excessive fees. While newspapers have been an important medium of contact, they are far from satisfactory from the standpoint of the workers. Both time and money are often

wasted in answering ads, only to find the job taken or the un-stated qualifications of the job to be such that the applicant stands no chance of being even considered.

*Distance.* Another barrier to mobility of labor is distance. In some instances enterprises establish their operations in localities which are readily accessible to workers. In this way the concerns may have a greater opportunity to attract the workers it wants. Not infrequently workers know of jobs which are available and which are more attractive than those they have, but are unable to take advantage of them because they are too far away from the location of the workers. As transportation facilities increase and costs diminish, the importance of distance declines as a barrier to labor mobility.

*Personal and Family Considerations.* Among other barriers are those personal and family ties which affect the mobility of workers when they must change the locality in which they live. This is especially likely to be the case with married workers who have not only themselves but also their families to consider. Moving to a different locality breaks many existing ties with old friends and acquaintances. It may be that children cannot be withdrawn from one school and entered in another without disadvantages to them. Then, too, the worker may own his home and often cannot sell it quickly without a loss. Circumstances such as these make workers reluctant to leave the locality in which they are living and hence contribute to the immobility of labor.

*Prejudices.* Still other barriers are those of prejudices, habits, and customs. In some occupations, such as railroad porters, there is a distinct preference for Negroes even in sections of the country where members of that race find it difficult or impossible to obtain employment in other occupations. Similarly there are barriers between Jews and Gentiles; Catholics and Protestants; native and foreign-born; males and females; young and old; married and single; union and non-union workers. Many establishments have employment policies which at least give preference to particular classes. In some instances the barriers are announced. Thus a concern wanting

salesmen advertised as follows: "Excellent opportunity for single men under forty. Protestants preferred. No Jews or foreigners need apply."

Labor is a basic requirement in the productive process. With the reversal of this country's traditional policy of unrestricted immigration the domestic population has become virtually the only source of labor. Less than half of the nation's population is gainfully employed at any time. Forced idleness of capable persons seeking employment is a serious indictment of the present manner in which productive activities are conducted. The effective utilization of labor depends upon a number of circumstances other than the number of workers available for gainful employment.

#### QUESTIONS

1. Explain the double rôle which human beings play in economic life.
2. What is meant by "labor" when human beings are viewed as instruments of production?
3. "The United States leads the rest of the world in the size and growth of population." Evaluate this statement.
4. What circumstances seem likely to give rise in time to a stationary population in the United States?
5. "Economic circumstances play an important part in the changing birth rate." Explain.
6. "It is not surprising that the United States is experiencing an older population since this occurs with every nation as it gets older." Is there necessarily any reason why a nation which has been in existence for about one hundred and fifty years should have an older population than a country whose roots run into antiquity such as China?
7. What circumstances have contributed to the change in the traditional immigration policy of the United States?
8. What proportion of the population is ordinarily employed?
9. "Some types of enforced idleness are beneficial and others are injurious." Explain this statement.
10. What is the nature of the needed information before the seriousness of enforced idleness can be determined?
11. To what extent ordinarily does there appear to be enforced idleness?
12. "With the increased use of machinery the involuntarily idle proportion of the population has been increasing over a period of years." What light, if any, does Doctor Douglas's study throw on this point?

13. How is the working population distributed as to nativity and race, sex, and age?
14. What is meant by the statement that "more attention has been given to extending the span of physical existence than to extending the span of economic existence"?
15. Point out changes which have occurred in the duration of the working period.
16. "Shorter working time is desirable only so long as costs can be diminished also." Do you agree? Give reasons.
17. "The supply of labor depends in part on the efficiency of the workers." Explain.
18. In what ways may working conditions affect the utilization of labor?
19. Why is labor mobility economically advantageous?
20. Indicate the circumstances which restrict the mobility of labor.

## CHAPTER XIV

# MANAGEMENT

IN VIEW of the fact that business may be conducted either privately or by the government, attention will first be turned to the general nature of management — its purpose and the technique by which it may be performed — regardless of who does the managing. Following this attention will be given to private management, especially the management of corporate enterprises.

### I. NATURE OF MANAGEMENT

#### A. PURPOSE OF MANAGEMENT

While natural resources, capital, and human energy are needed for production, they do not come together automatically in such manner as to furnish the commodities and services which flow from farms, mines, factories, railroads, stores, etc. This requires the making of decisions, and it is the function of management to make them within the limits of surrounding circumstances. Indeed, management has been referred to as the "decision-making factor of production."

*To Make Decisions.* Broadly the decisions which management is expected to make fall into two groups. Some decisions determine *what* is to be produced and others *how* it is to be done. Often these aspects are closely related, but they are not necessarily the same thing. For instance, when a glass-manufacturing concern, such as the Owens Illinois Company, decides to engage also in the manufacture of tin cans, there are various ways in which the new field can be entered. It may be expedient to acquire one or more companies already engaged in making tin cans or it may be more advantageous to create new productive facilities. In either case there are

decisions needed as to the particular way in which the product is to be made.

By deciding what shall be produced, management has the responsibility of directing the productive factors into those channels which will be most serviceable to society. It has already been noted that the only limit to consumption is set by the possibilities for production. Since productive facilities are insufficient to furnish all the things which are wanted, a choice must be made as to what shall be produced with the available facilities. Under a system of private business it was assumed that producers would be diligent in ascertaining what consumers want and in directing the productive factors toward those wants. Consequently labor, capital, and land would not be used to furnish buggies when automobiles are wanted, nor phonographs in place of radios, nor paper shoes when leather ones are desired.

In deciding how goods are to be produced, management has the further responsibility of coordinating productive facilities in the most economical manner possible. Although labor, capital, and resources are needed in virtually all businesses, the particular kinds and amounts of these productive factors which are required for any given purpose are not rigidly fixed. Instead there are different proportions in which the productive factors can be combined. With a "one-man" trolley on which the same individual acts as motorman and conductor, less labor is used in relation to the same amount of capital than with a two-man car. When high buildings are constructed more capital is used in relation to a given amount of land than when low buildings are constructed; when farms are mechanized less labor is used in relation to the same amount of land than when work is done by hand. With the possibility for different combinations, management must try to determine the one which is most economical.

*The Limiting Circumstances.* While management is responsible for making decisions, these must be made within the limits of surrounding circumstances. The limiting or conditioning influences which management must take into account

are numerous and varied, but center around technical, financial, and psychological considerations.

(a) *Technical.* The limitations arising out of either physical necessities or the lack of knowledge may be said to be of a technical character. Radio reception would be more satisfactory if some means could be devised for controlling static, but as yet no way has been found for accomplishing this. Similarly no way has been found for harnessing the sun's rays as a source of commercial energy. The influence of physical conditions accounts for the concentration of cotton-growing in the southern states, since this area furnishes the particular combination of conditions required for the cultivation of the cotton plant. To grow cotton successfully, in addition to fertile soil there must be warm climate and a long growing season, with rain distributed differently throughout the season. During and immediately after the sowing of seed the soil must be kept moist for the seed to germinate; this condition is furnished by numerous light showers. As the plant begins to mature, moisture is needed at the roots of the plant and this is furnished by less frequent but heavier rains. Then as the cotton approaches the picking stage, there must be warm but dry weather. All these physical conditions are found in the cotton belt, hence the decision to raise cotton on a commercial scale in this country made it essential that the product be grown in the area possessing the required physical conditions.

(b) *Financial.* Considerations of a financial character exert their influence in several directions. Whether goods are produced in anticipation of demand or in response to demand, financial provision must be made for bringing the required factors of production together. Labor must be hired and machinery, land, buildings, etc., must be purchased or leased. Decisions must, therefore, be made as to the scale on which operations are to be conducted. This in turn is influenced by the amount of investment needed and the possibilities of obtaining it. Decisions must be made as to how the investment, whether large or small, is to be acquired. With private

corporations a wide variety of securities may be floated, while the government may borrow, tax, or print money to finance its undertakings. With a going concern the relation between the income and expenses of operation influence the advisability of expansion, the opportunities to obtain improved equipment, etc.

(c) *Psychological*. Managerial decisions as to what is to be produced and how it is to be done must take into account the psychological reactions of consumers, workers, and the general public. The importance of cultivating consumer goodwill has long been recognized in many lines of business. If the decisions of management destroy consumer confidence or otherwise displease consumers, a profitable market may suddenly disappear. An illustration of this situation occurred with the railroads. Their refusal to adjust service and rates to changing conditions caused them to lose much profitable business to bus and truck lines. Considerable time was required for the roads to realize that their former patronage was not the result of satisfied customers but the result of monopoly by which consumers were more or less at their mercy.

More slowly but no less surely the decisions of management are taking reactions of workers into account, especially in places where unions are in a position to exert direct influence. Scarcely less important is the fear of unionization in prompting management to avoid those conditions which stimulate the desire of workers to organize. No sooner were plans for the industrial organization of the steel industry put into operation in 1936 than the large companies began to make concessions to their workers, including vacations, which had hitherto been virtually unknown except for executives and white collar workers. Then too, there is increasing realization that the silent dissatisfaction, as evidenced by sabotage and labor turnover, is expensive and represents a cost which can seldom be passed on to consumers in the form of higher prices.

Only within comparatively recent times have managerial decisions been influenced by the reactions of the general public. The earlier attitude was expressed by the phrase

"the public be damned." But experience has indicated that the public is not so docile and inconsequential as this attitude assumed. Consequently large enterprises often establish public relations departments and spend large sums cultivating favor with the public. In some instances these activities are genuine, but there is reason to suspect that in many cases they constitute the sheep's clothing within which the wolf operates, or the blinds behind which nefarious activities can be conducted with greater safety from governmental regulation. Even if business were conducted by the government the influence of public opinion would influence managerial decisions.

#### B. TECHNIQUE OF MANAGEMENT

Regardless of who does the directing and coordinating of productive activities, there are different bases on which decisions may rest. In some cases tradition, in others trial and error, and in still others scientific inquiry furnishes the basis for the decisions.

*Tradition.* Business decisions often are dominated by tradition. In such cases things continue to be done in much the same way they were done in the past. Time-honored ways become routinized. Seldom is inquiry made as to why things were formerly done in a particular way or whether this way is the most satisfactory under existing conditions. As long as profits are being made management is likely to be lulled into a false sense of security and a false faith in the accuracy of its judgment. Under these circumstances a rigidity develops which may prove disastrous in the face of changing conditions. Even progressive management may at times be caught in the net of tradition. This appears to have been the case with the Ford Motor Company some years ago when, despite changing conditions and improved mechanical knowledge, it continued to make its world-famous Model T car. Not until modern cars of competitors, especially Chevrolet, had made serious inroads in the Ford market did that company cease making its traditional model and shift to a radically different one.

*Trial and Error.* A more flexible basis than tradition for managerial decisions is provided by trial and error. Here the underlying idea is to try different things and reject those which prove unsatisfactory. In its crudest and most widely used form this method relies mainly on guesses, hunches, and beliefs as the bases for decisions. An illustration of this occurs in the manufacture of women's dresses. With the advent of ready-to-wear garments at the close of the nineteenth century, the "Bauman forms" came to be used largely as models. These models were determined by the measurement of a few women chosen at random. Even if the measurements were typical at the time they were made — which is unlikely — there have been changes in the female form which have never been reliably ascertained for the purpose of making garments in large quantities of standard sizes. Only hap-hazard changes in sizes have been made by individual manufacturers. It is estimated that about 90 per cent of the customers under 20 years of age can wear ready-made dresses without alterations, but this is the case with only 50 per cent between the ages of twenty and twenty-four, and of only 33 per cent over forty-five years. The result is that disadvantages are experienced all around; the manufacturer loses from returned merchandise; the retailer through markdowns from returns, and the customer through wasteful expenditure of money, energy, and time. While there is probably greater uniformity in measurements in the younger group, the trial-and-error procedure apparently continues because no one manufacturer is in a position to bear the cost of a thorough investigation the benefits of which would be available to competitors, and rivalry within the industry seems to prevent a cooperative undertaking.

*Scientific Management.* A more advanced form of the trial-and-error technique has come to be known as scientific management. This term first received public recognition when in 1910 Louis D. Brandeis, who later became a Justice of the United States Supreme Court, was arguing a case against a proposed increase in railroad rates. He contended that through

scientific management the roads could increase wages without raising rates. The distinguishing feature of such management is that it substitutes knowledge for guesses and hunches. The pioneer work was done by Frederick W. Taylor toward the close of the last century. His experience as a worker, and later as a foreman, in the Midvale Steel Company convinced him that output of workers was unnecessarily small and that costs were consequently unnecessarily high. The reason for this, as he saw it, was the absence of a factual basis for management. In attempting to furnish this basis for shop management, Taylor gave attention to establishing standard working conditions and practices. Workers could not convert their services into maximum output without machinery in good working order, nor were the services of mechanics being utilized efficiently when they were hunting tools and materials, and were waiting for the finished work to be inspected or for new work to be assigned. On the basis of factual information working conditions were so standardized as to minimize delays and other interferences with efficient performance of work. But a factual basis for shop management called for more than standard working conditions. The requirements for each job and how it could best be performed also had to be known. Through time and motion studies the way in which jobs were being performed was analyzed. This provided information by which performance could be improved and job specifications established. These were useful both in the selection and the training of workers. And instead of the worker guessing how a particular job assigned to him was to be performed, he was given specific written instruction as to what was to be done. With working conditions under control, employees selected on the basis of qualifications, and with standard practices prevailing, it became possible to determine a standard time for the performance of any task. This standard was useful in two directions. On the one hand it was used as a basis for an incentive method of wage payment. To this attention will be given in a later chapter. On the other hand, with knowledge as to the prob-

able time required it was possible both to plan the flow of work more efficiently and to know in advance the probable cost of any task.

While scientific management originated as a technique for more efficient conduct of a manufacturing shop, the technique has spread to the broader aspects of managing an enterprise as a whole. This is not surprising since those who are directing the major course of a business also need a factual basis for their decisions. Indeed, without such a basis they are not able to exercise effective control over the activities of the entire enterprise. Control of this kind is especially important in attempting to increase the regularity of operations, employment, and profits. A concern with scientific management is more likely to weather the storm of depression than are those without it.

An even wider field for scientific management develops when attempts are made to direct and coordinate business on a national or an international scale. This aspect of management is just emerging. While the most advanced experimental steps have been taken in Russia, other countries have already established economic councils for the purpose of advising how productive facilities can be used more advantageously for their national welfare. For the successful performance of such responsibility the technique of scientific management is indispensable.

## II. PRIVATE MANAGEMENT

Traditionally, the owners of property not only had the right to control the use of their property, but actually exercised that right in considerable detail. Consequently ownership and management, as has been seen, were virtually the same thing. With the advent of the corporation this situation began to change. Different levels of authority or control developed. These may be designated as major, administrative, and operating control. Centering attention on the management of corporations does not imply that manage-

ment is peculiar to such enterprises, but they are the ones which dominate most lines of business and which are likely to provide the most elaborate managerial structure.

#### A. MAJOR CONTROL

Just what constitutes major control of a corporation depends upon surrounding circumstances, but as the term is used here, it refers mainly to the power to select and instruct the Board of Directors. Professors Berle and Means<sup>1</sup> call attention to five bases on which such control may rest. While no sharp line separates these types, they are fairly distinguishable.

*Complete Ownership.* At the one extreme is the control based on complete or virtually complete ownership of stock by a small group of associates. The largest enterprise which is controlled in this manner is the Ford Motor Company, with the Ford family owning all the stock. Not only does the family have the power to control the enterprise through ownership of stock, but it actually exercises that control, with the result that ownership and control are in the same hands. There are also cases where one corporation owns all the stock of another. Here, likewise, there is no separation of ownership and control.

*Majority Ownership.* The first step in the separation comes when one person or group of associates is in a position to control an enterprise through ownership of a majority of the outstanding stock. With all shares having the same voting power, an ownership of 51 per cent of the shares is sufficient to assure control for most purposes. On some matters, such as deciding whether or not the corporation shall be dissolved, a larger proportion may be required. In general, however, the minority group has virtually no control over the enterprise; only with the majority is ownership and control combined.

*Minority Ownership.* A vastly greater separation arises when control is based on a minority ownership of stock, together with ability to swing other votes and thus control a majority

<sup>1</sup> See Berle and Means: *The Modern Corporation and Private Property*.

of the voting. An illustration of this occurred in 1929 when John D. Rockefeller, Jr., sought to dislodge the active management of the Standard Oil Company of Indiana, following a public disclosure of some questionable practices on the part of the management. In a bitter election fight, Rockefeller was able to marshal about 65 per cent of the votes cast, although he personally controlled only 15 per cent of the voting stock. Whether a less influential person could have done likewise, and whether Rockefeller would have been successful if there had not been considerable public support of his position, remain matters of conjecture. The important point is that the election was dominated by a person who had a distinctly minority interest in the enterprise.

*Management Control.* With some corporations stock ownership is so widely distributed that no individual or small group has even sufficient minority interest around which to develop control. Under such circumstances the existing management may retain control indefinitely. Instances of this occur with the American Telephone and Telegraph, Pennsylvania Railroad, and United States Steel Companies. The assets of these concerns in 1929 were \$4,200,000,000, \$2,600,000,000, and \$2,300,-000,000 respectively. The number of their stockholders runs into hundreds of thousands, and these are distributed throughout the United States and foreign countries. Mention has already been made of the fact that in 1929 not a single stockholder of the Pennsylvania Railroad held more than one third of 1 per cent of the shares and the twenty largest holders had only 2.7 per cent. In neither of the other two companies did any one holder have as much as 1 per cent, and the twenty largest had 4.6 per cent of the telephone and 6.4 per cent of the steel stock.

Proxy voting is the particular device which aids management in maintaining its control. Technically shareholders maintain their control of an enterprise by the exercise of voting power on such matters as must be submitted to them and in selecting directors. But in large corporations, with numerous and widely distributed shareholders, most of the

holders delegate their voting power to a substitute or proxy. So general has this become that "proxy committees" are selected and suggested to the shareholder. In fact the suggested names are printed on a form which is mailed to the shareholder along with the notice of the meeting at which the voting will occur. These persons are probably unknown to most of the shareholders, who delegate power to them by merely signing the official proxy and mailing it to the offices of the corporation. While shareholders are not obliged to accept the suggested names, these are usually accepted unless there is a contest between factions for the control of the company. In the absence of contest, the existing Board of Directors may be in a position to dominate the selection of the persons serving as the proxy committee. In such cases the directors virtually re-elect themselves and approve their own acts in the name of the shareholders. When this stage is reached the current control has practically no basis in stock ownership.

*Legal Devices.* While management control can exist with little or no ownership, the circumstances under which such control can develop are not found in many enterprises, consequently other means have been devised to acquire control with comparatively little investment. Among these devices are non-voting stock, shares with disproportionate voting power, voting trusts, and the pyramiding of holding companies.

Non-voting stock has developed largely because most investors are interested in dividends rather than in control. For many years it has been more or less customary for preferred stock to have no voting power so long as the dividends were paid. Only recently, however, has common stock been divided into two classes, one with and one without voting power. By the use of non-voting stock a small part of the total investment can control the enterprise. Such appears to have been an important source of control with the Associated Gas and Electric Company and with the American Tobacco Company.

Disproportionate voting has been scarcely less effective in

separating ownership and control. The preferred shares of the Cities Service Company, with a par value of \$1, have each one vote, while the common shares have each one twentieth of a vote. A group desiring control could obtain considerable voting power with a relatively small investment by purchasing the preferred shares with their disproportionately large voting strength. The use of such shares coupled with the wide distribution of the company's stock enabled an investment of \$1,000,000 to control assets of about 1 billion dollars. Much the same disparity between investment and control existed with the Standard Gas and Electric Company, where each share of \$1 preferred stock had the same voting power as a \$50 share of common stock.

The voting trust makes possible complete separation of ownership and control for a more or less extended period of time. On the basis of an agreement, the owners of stock transfer their title to trustees, who then have exclusive right to vote the stock during a designated period of time. At the expiration of the period the trust agreement must be renewed or the stock must be returned to the holders of trust certificates. In a sense these certificates are receipts for the stock. Such an arrangement was made to control the Pennroad Corporation. This company was formed as an instrument of the Pennsylvania Railroad for the purpose of acquiring stock in such other roads as the Pennsylvania wanted in a system it could dominate. Fear that antagonistic interests might attempt to get possession of sufficient Pennroad stock to block the accomplishment of the purpose for which the company was formed apparently prompted the creation of the voting trust. In this way voting control was solidified in the hands of trustees for an original period of ten years.

Pyramiding of holding companies has become a favorite means of separating those who control enterprises from those who make investments in them. Suppose several holding companies each have a controlling interest in a number of operating companies and that the aggregate investment in the holding companies is \$10,000,000. Suppose further that

these holding companies have issued only common voting stock so that 51 per cent of the stock in each must be owned by any group wanting control of these companies and through them control of the operating companies. For control an investment of say \$5,100,000 is required. But this figure could be considerably reduced and the control retained by forming another holding company, to which the \$5,100,000 in stock would be transferred. In exchange the new holding company might issue stock of which 70 per cent would be non-voting common stock and 30 per cent common stock with voting power. Control would then center in \$1,530,000 worth of stock or 30 per cent of the \$5,100,000. But only 51 per cent of this \$1,530,000, or \$780,000, is really needed to retain control of the superholding company, and all the non-voting stock can be sold to the public without endangering the concentration of control. The control of this company automatically gives control over the underlying companies. Thus, an original investment of \$10,000,000 necessary to control the operating companies has been reduced to \$780,000 without in any way reducing the control of the manipulating group. As control was acquired over additional companies the process might be repeated, and the superholding companies in turn brought together under the control of still other holding companies as indicated in a previous chapter.

Pyramiding of this kind has been especially prominent with railroads and electric power companies. Figure 37 illustrates only the main units in the railroad branch of the Van Sweringen empire. Operating companies are shown by heavy lines and holding companies by light lines. Within each block the financial interest of the Van Sweringens is shown and along the lines which connect the blocks is shown the proportion of votes each company has in underlying companies. It will be noted that with this structure the Van Sweringens were able to control the Hocking Valley road, even though the public furnished 99 3/4 per cent of its capital and in none of the eight operating companies did the Van Sweringen interest amount to as much as 2 per cent of the capital invested.

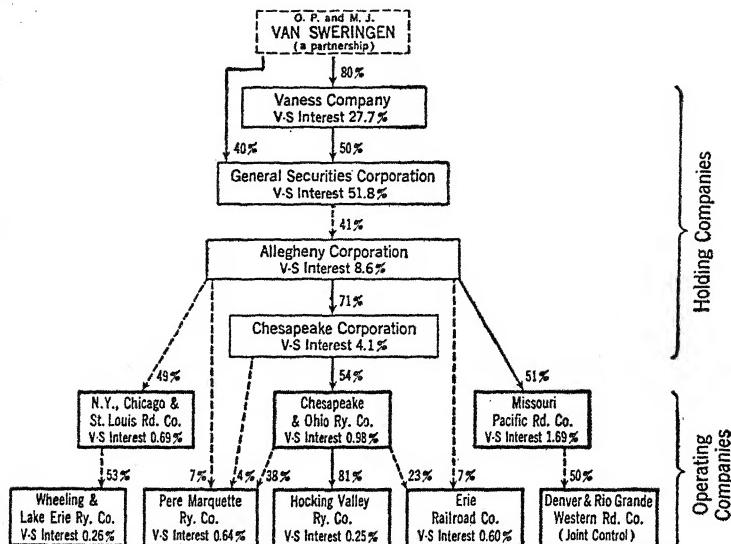


FIGURE 37. ILLUSTRATION OF CONTROL OVER OPERATING COMPANIES BY DEVICE OF PYRAMIDING HOLDING COMPANIES

From *Regulation of Stock Ownership in Railroads*, a report to the House of Representatives, Washington, 1931.

## B. ADMINISTRATIVE CONTROL

While it is important to realize the increasing tendency for the major control of enterprises to be in the hands of individuals who have furnished little, if any, of the total investment, it is also necessary to realize that those exercising such control may or may not participate in administering the affairs of the concern.

*Board of Directors.* At the top of the administrative organization is the Board of Directors. To this body the shareholders delegate discretionary powers in directing the affairs of the company. How broad these powers may be depends partly upon the laws of the state in which the corporation is created and partly upon the constitution and by-laws of the company. In some cases no important decisions can be made without the approval of the shareholders, while in others the directors have power to do virtually anything except dissolve the

corporation. In any event the Board is primarily a policy-making body.

There are ordinarily no particular qualifications which board members must possess. With smaller corporations the members are likely to have intimate contact with the affairs of the business and direct it on the basis of such contacts. With larger enterprises directors frequently have no acquaintance with the business and may not have any particular interest in it except for the possibilities it offers for financial manipulation. For a few members to lack familiarity with the business is not necessarily disadvantageous provided they furnish a type of knowledge or ability which the business needs but which is not peculiar to it, such as legal talent. Sometimes persons are selected merely for the prestige of their names or that of their families. Congressional investigations have disclosed individuals who alleged they did not even know they were board members of fairly large concerns. Not infrequently individuals are members of so many boards in diverse lines of business that they cannot concentrate their attention adequately on the affairs of any one enterprise.

When a board is not an active administrative body, meeting only once or twice a year, authority to make decisions is usually delegated to one or more committees. Most large corporations have at least an executive committee and probably a finance committee. The members of these committees are selected from the Board, and are usually chosen on the basis of their qualifications to deal with particular problems. In some corporations, especially smaller ones, the board delegates power to a managing director.

*Officers.* Next in order come the officers. These are not employees, but are agents of both the Board and the corporation itself. While they may or may not be members of the Board, they are chosen by it, receive instructions from it, and are responsible to it for their official acts. They need not own shares in the corporation and are usually not required to meet any particular legal qualifications. The extent of their control depends largely on whether or not the directors are

active. With an inactive Board much greater authority and discretion are likely to be in the hands of officers than with an active directing body.

The ranking officer of the corporation is the President. This officer usually presides at the meetings and directs the affairs of the corporation according to the instructions of the Board. He is the chief executive and most other officers are responsible to him. An exception may occur where there is also a Chairman of the Board. In this event the President remains the ranking officer of the corporation although the Chairman is the ranking officer of the Board. In some cases one of these offices may be honorary, although usually they both require active service. Where both are active, the Chairman is likely to be a person of mature years and experience in negotiating large and important transactions with outside groups, while the President has charge of the internal operations of the company.

The other officers may be many or few. The most customary officers are Vice-President, Secretary, and Treasurer. In addition to these there may be others such as Controller, Auditor, and Counsel. The Vice-President stands ready to perform the duties of the President when, as, or if the need arises. The Secretary is responsible for the minutes of the Board meetings and the official documents of the corporation are in his charge. The Controller is usually responsible for planning to have funds available in the future as they are needed by the Treasurer, while the Auditor checks the way in which the funds have been used. The legal aspects of the business are under the jurisdiction of the Counsel. While each office represents a function or a particular type of administrative activity, one individual may occupy more than one office. This is especially likely to be the case with smaller enterprises. Thus the same person might be both Secretary and Treasurer, or may be both Vice-President and Counsel.

#### C. OPERATING CONTROL

*Executives.* Just as directors may or may not be officers, so the officers may or may not be operating executives. Ordin-

narily the executives have the legal status of employees rather than of agents of the corporation. They receive their instructions from officials and are responsible to them. This applies even where an officer is also an executive unless the executive function is a part of the official position. For example, the Secretary of a company might be its chief chemist, in which case the same persons fill an official and also an administrative position. But the situation is different when an office has operating obligations attached to it. Thus a position such as Vice-President in Charge of Research is an official position with operating duties attached. Except in cases of this kind executives have narrower authority than officers.

While the operation of a company is generally in the hands of its own employees, this is not always the case. Especially in the public utility field "management companies" have come into use. These are sometimes holding companies which are prepared to furnish, in return for a management fee, any of the services required for the operation of underlying companies. Not infrequently the underlying companies are compelled to accept the services and pay for them at an exorbitant rate. The Electric Bond and Share Company is an illustration of a concern furnishing operating services to other companies. For its clients this company will raise funds, market securities, make purchases of equipment and supplies, and furnish legal, engineering and other services. That the performance of services may occur under circumstances which provide handsome profits to the servicing company is illustrated by the Consumers Construction Company through which all construction of the Associated Gas and Electric System was done between 1927 and 1929. During this period the servicing company profited to the extent of \$8.25 for every dollar it spent.<sup>1</sup>

*Duties.* Whatever the basis is on which the operating executives are employed, the duties to be performed are the same. Arrangements must be made for carrying out the policies and instructions of the administrative group. For instance, a

<sup>1</sup> See *Harvard Law Review*, April, 1936.

director of an electrical equipment manufacturing company may propose at a board meeting that the company look into the possibilities for manufacturing low-priced air-conditioning equipment. The proposal is approved and the President is instructed to submit plans for subsequent consideration of the Board. This single decision develops into numerous problems for operating executives. Decisions must be made on such matters as the mechanical features of the equipment, the way in which the product can best be manufactured, the probable cost, and the sales prospect. If the Board finally decides that manufacturing of the equipment shall be undertaken, still further operating arrangements are necessary. Budget provisions must be made, machinery will probably need to be purchased, supplies will have to be ordered, new workers must be employed or old workers shifted to new jobs.

The activities which constitute operating control differ from those of administrative control more in degree than in kind. Operating management centers around planning what is to be done, directing how it is to be performed, and supervising the performance. In performing these duties an operating executive is engaged in the same type of activities as an active President in executing the instructions given to him by the Board of Directors, or of the Board itself in executing the instructions of stockholders. The differences are essentially those of degree with the operating executives responsible for *detailed* planning, directing, and supervision.

*Organization.* In the operating organization there is likely to be considerable subdivision of duties and need for a well-defined plan by which duties are distributed and coordinated. This need is not necessarily restricted to the operating organization, but it is here that the most detailed provisions are usually made for meeting the need of the enterprise. While no particular plan is equally well suited to all enterprises, the types most frequently encountered are sometimes known as "functional" and "divisional."

With functional organization duties of a similar kind are grouped together under central supervision. The similari-

ties which may best serve as the basis for organization are not the same in all cases. For instance, under some circumstances the nature of sales may be the organizational similarities, as when a tire-manufacturing company distinguishes between wholesale and retail marketing by making each a branch or department of the business. Under other circumstances the nature of the product furnishes the basis. Thus a concern manufacturing both radios and electric refrigerators may have separate operating organization in connection with each product. When an enterprise, instead of having each department handle its own personnel relations, creates a personnel department there is functional organization based on these activities.

A divisional plan, on the other hand, provides for duplicate organizations on the basis of the place where the activities are performed. This arrangement is widely used in railroad-ing and in other enterprises whose activities are distributed over a large geographical area. The above-mentioned concern manufacturing radios and refrigerators might have a divisional, rather than a functional, sales organization. On the divisional basis the sales manager in each area would have jurisdiction of the selling of both products in that territory.

These two types of organization are used in various combinations. One department of a business may have an elaborate divisional organization, while the other departments are functional. For example, both manufacturing and selling may be organized on a functional basis. Even when there is extensive divisional organization these strands are likely to be drawn together sooner or later on a functional basis. Thus a concern might have a number of district sales managers under the jurisdiction of a general manager in charge of all sales. In some cases, however, the divisional lines continue into the administrative organization. A railroad may have a vice-president in charge of real estate at Philadelphia and another vice-president in charge of real estate at Pittsburgh.

When operating activities are divided into branches or departments, provisions are usually necessary, especially in large

organizations, to meet two situations. New problems are constantly arising and often present too many aspects for any one individual, into whose jurisdiction they fall, to comprehend and evaluate on the basis of his own experience and knowledge. This is no less true of general managers than of shop foremen. Consequently, it is often advisable to provide expert knowledge and advice. There is also considerable danger that individual departments will operate without adequate coordination with other departments. Even antagonism may develop between them. To meet this situation provision is frequently made for a staff organization which serves in an advisory capacity.

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Management is an essential factor in the productive process. Through it the other factors are coordinated with a view to furnishing the goods which consumers want by the most economical use of land, labor, and capital. The task of management is the same whether performed by private enterprises or by governmental bodies. With private enterprises the making of managerial decisions is technically in the hands of the owners of the property which is at stake in the undertaking, or is vested in their representatives. Among corporations the making of decisions is variously distributed among shareholders, boards of directors, administrative officers, and operating executives. Seldom do these groups overlap completely, although there is often sufficient overlapping for them to be interlocked. Not only the operating and administrative control, but also the major control, is frequently in the hands of individuals who have little or no investment in the enterprise. Especially in the operating management there is likely to be an elaborate structure which may be organized in different ways with no one way equally satisfactory under all circumstances.

#### QUESTIONS

1. Explain what is meant by management being the "decision-making factor of production."
2. What responsibility does management assume in deciding what shall be produced?

3. Does the responsibility which rests on management in deciding how goods are to be produced differ in any respect from the responsibility in deciding what is to be produced?
4. What is meant by "technical factors limiting the decisions of management"?
5. Point out several ways in which financial considerations may influence managerial decisions.
6. How, if at all, do psychological factors affect the decision-making of management?
7. What is meant by the technique of management?
8. Is the need for managerial technique restricted to private enterprises? Explain.
9. How does tradition differ from trial and error as a technique of management?
10. What is meant by "scientific management"?
11. "It is impossible to set a standard for the performance of work." Do you agree? Give reasons.
12. Explain the statement that "the technique of scientific management has extended beyond its original field."
13. How, if at all, can it be said that with corporate enterprises there are often "different levels of managerial control"?
14. "Investment is no index to control." Explain.
15. Point out the circumstances which open the way for management control.
16. Explain some of the legal devices by which there comes to be a separation of ownership and control.
17. Distinguish between major and administrative control.
18. "Officers and directors have different status." Explain.
19. In what respects, if any, does operating control differ from administrative control?
20. How does functional organization differ from divisional organization?

## CHAPTER XV

### REGULATION

IN THE preceding chapter it was observed that the various requirements for production do not come together automatically nor do they coordinate themselves. Under a system of private business a considerable part of the directing and coordinating is done by the owners of the property used in the productive process, or by those to whom the owners have delegated authority. But other groups also exert deliberate influence on the lines along which productive activity moves and the manner in which it is conducted. The influence of these groups results in a type of control which is often called regulation. Most frequently regulation refers to the control exercised by governmental agencies, although private agencies may also exert regulatory influence.

#### I. PRIVATE REGULATION

Privately formed organizations are seldom given any government grant of authority to regulate business, although at times the government recognizes and even utilizes such power as private organizations are in a position to exercise. Their power comes rather from the strength of numbers and of unified action.

##### A. TYPES OF PRIVATE REGULATION

*Geographical Scope.* The bulk of private organizations are local in character. In most towns and cities there is at least one organization such as a chamber of commerce or board of trade which represents the general business interests of the community. Usually in larger cities there are some organizations representing more specific interests. Thus merchants, manufacturers, hotel managers, etc., may each have a local associa-

tion. Sometimes the geographical unit is a particular section of a city, or a single street, as with a Northeast Business Men's Association or a Market Street Food Merchants' League. In industrial communities local labor unions are likely to be numerous. Occasionally a consumers' association is found.

While local associations are most numerous, their range of influence is also the most limited unless they are unified. For distinctly local problems their scope is adequate, but not for dealing with the more powerful forces which affect business conduct and relations. These are at least state-wide and are often national or even international in scope. A local organization battling broad forces has about as much influence on them as a pop-gun has on the Rock of Gibraltar. Consequently groups find it advantageous to organize on a sufficiently broad basis to influence the forces which affect their common interests. In some instances local organizations are woven into a larger structure. This occurs with chambers of commerce. Local units are affiliated with their state chamber and with the national body, which is known as the United States Chamber of Commerce. Similar organizations in many countries are woven into the International Chamber of Commerce. Enterprises in particular lines of business generally have their national bodies, as illustrated by the National Retail Dry Goods Association and the National Association of Manufacturers.

Just as business concerns have found it advantageous to organize on a broad geographical scale, so workers have found that their interests can be protected only by organizations which are equally broad in scope. Except for company unions, local units are welded into larger organizations, as has already been noted. Usually the pyramiding extends to at least national bodies, as with the Brotherhood of Locomotive Engineers and the National Association of Letter Carriers. Some are international, as with the International Ladies Garment Workers' Union. These are generally international by virtue of having local units in the adjoining countries of Canada or Mexico, and are not international in a world-wide

sense. The only organizations which seek to solidify all labor the world over are the Communist and the Socialist Parties. There is also the International Labor Organization, which was created in connection with the League of Nations. Membership in this organization, however, is by nations and does not represent an international combination of labor unions.

*Nature of Activities.* Whatever the geographical scope of voluntary organizations may be, their regulatory activities are of different types. For convenience these may be designated as internal discipline and external pressure.

(a) *Internal Discipline.* As a means of rendering certain services to their members voluntary associations at times establish standards to which their members must adhere. Violations of these standards subject the members to discipline by the organization. With labor unions the standard usually relates to the terms on which members may accept employment without being expelled from the union. Seldom do these organizations establish standards of proficiency which their members must meet. With professional organizations the standards usually relate to the professional conduct of members, although moral suasion may be exerted with respect to charges for service. The prestige of a medical association or a bar association, for instance, is likely to be such that an individual cannot attain any standing in the profession without being a member of the organized group. This fact gives the association more than advisory influence over the conduct of its members. Such organizations as the New York Stock Exchange and the Chicago Board of Trade also are in a position to exert drastic disciplinary control over the manner in which their members conduct business.

(b) *External Pressure.* It is almost impossible for the influence of an organization to be confined to its members. Outside parties are likely to be affected in one way or another. In some cases the outside influence is distinctly incidental. This occurs when members of a trade association have access to valuable information which non-members in the trade do not have. But in other cases the major purpose of an organ-

ization is to exercise control over the actions of outside parties. The pressure so exerted may be either economic or political.

(1) *Economic Control.* At times the influence of an organization extends to restricting the freedom with which persons can engage in a particular form of productive activity or to restrict the opportunities for them to continue once they have begun. Retailers may boycott wholesalers who also sell direct to ultimate consumers and thus force wholesalers to restrict their activities to serving retailers. A trade association may, by excluding concerns from membership, prevent their obtaining essential trade information by which they can successfully compete with firms to whom such information is available. When labor unions are sufficiently strong to have collective agreements which provide for the employment of only union labor, as in the building trades, there is no opportunity for a non-union worker to obtain employment.

The manner in which enterprises conduct their business relations may also be subject to economic pressure of privately formed organizations. Probably the New York Stock Exchange is able to exert more economic pressure than any other private organization in this country. In addition to controlling its own members, it has extended its influence to concerns whose stock was listed for trading on the floor of the Exchange. An instance of this occurred in connection with the Allied Chemical Company. Despite the large public investment in this enterprise, the financial statements of the concern furnished inadequate information for an analysis of its condition even by investment experts. After repeated requests for more complete information the Exchange threatened to forbid the sale of the company's stock on the floor of the Exchange. Shortly thereafter the policy of the company was changed and more detailed information was made available to the public. Another instance occurred with the advent of non-voting common stock which permitted extreme concentration of power supported by little cash investment. The Exchange indicated that it would scrutinize all stock

of this kind before admitting it for trading, and a curbing influence was exerted thereby on the use of such stock.

Terms of trade are peculiarly subject to the economic pressure of groups which undertake to influence them. Labor relations are affected by the organized activities of both employers and employees. Recognition of unions, higher rates of pay, and shorter hours of work are among the accomplishments of strikes or the fear of them. On the other hand the organization of employers has been effective in resisting the demands of workers. In buying and selling commodities cooperatives are intended to influence the terms of trade. An official of a national association of dealers who handle building supplies points out in a bulletin of the association that: "organized dealers are in a position to demand rather than request justice of manufacturers and others with whom they come in business contact." In excluding labor unions and cooperative associations as combinations in restraint of trade the government deliberately intended to strengthen the bargaining power of groups which were notoriously weak in relation to those with whom they generally dealt in selling their services or commodities. Despite legal limitations which associations of business concerns generally encounter in attempting to regulate prices, production, discounts, etc., organizations continue to exert pressure in these directions.

(2) *Political Pressure.* By no means inconsequential is the political pressure which voluntarily organized groups may be in a position to exert. The sole purpose of some organized groups is to exert such pressure, as with a tariff league or an association for child labor legislation. With other groups political aspects are of at least major importance, as with the United States Chamber of Commerce and the National Association of Manufacturers. Most trade associations and labor associations exercise some degree of political influence in the interests of their members. It has already been noted that the energies of the American Federation of Labor have been directed mainly to the exercise of economic pressure by means of the strike, but it has exerted very considerable political

influence. Even greater influence of this kind has been exercised by state organizations.

Pressure of a political character may be along either defensive or offensive lines. Those groups with established or vested interests seek to protect these by resisting efforts designed to reduce or eliminate them. This was illustrated by the vigorous campaign conducted by the public utilities when, in 1935, legislation was under consideration for curbing the use of the holding company as a device for concentration of private control of utilities in a few hands. No form of pressure was overlooked by the utilities in conducting their defensive campaign. At the same time there are always groups, sometimes known as "agitators," which seek some change in the existing order and arrangement of things. They take the offensive and make the attack. In doing so they are likely to employ any devices by which they can exert sufficient pressure to accomplish their objective, whether it be for social insurance, against higher corporate taxes, or for higher tariffs.

The mediums through which political pressure is exercised are votes and dollars. Seldom can an organization exert much political influence unless it is in a position to swing votes so that it can either reward those legislators and administrators who support it or punish those who oppose it. For the most part politicians are not leaders in forming public opinion but are followers of the majority opinion. Consequently they are responsive to any organized pressure group which is in a position to swing public opinion. However, politicians are beset by conflicting pressure and they must decide which groups are the most powerful. Here is where the influence of money enters. Rarely can an organization be politically influential unless it is in a financial position to conduct rather expensive offensive or defensive campaigns. In conducting an election campaign various groups expend funds in renting assembly halls, engaging bands and entertainers, paying for publicity, and purchasing votes. In fighting for or against a measure effective lobbying is also costly. Publicity must be generated on the one hand and subtle

maneuvering conducted on the other. When strength is not as great as needed it must be made to appear greater. In the above-mentioned fight of the public utilities some companies sent fake telegrams of protest in wholesale lots to Congressmen, apparently using in some cases forged signatures from telephone directories. In the maneuvering process money often flows like water in entertaining and otherwise bribing influential persons, and in shadowing them to get information which can be used for subtle blackmail if other means fail to win support.

#### B. LIMITATIONS TO PRIVATE REGULATION

*Establishing and Maintaining Strength.* The number of voluntary associations which exercise discipline and exert pressure might suggest that the creating of strength is rather easy. But such is not likely to be the case. Not only must persons with common interests be "rounded up" but they must often be persuaded that the activities of the organization can benefit them individually in excess of the contribution they are asked to make for its financial support. Substantially the same difficulties which are encountered in establishing strength make the maintaining of it difficult. Just as individuals cannot be compelled to join an association, so they cannot be compelled to remain in it. Usually an organization is not so strong in prestige or power that members encounter insuperable difficulties if they withdraw. The nearest approach to this occurs with some labor unions and some professional societies. Membership is likely to be maintained, to say nothing of being increased, only when the members derive individual benefits. Business organizations are not philanthropic bodies, although some enterprises take a longer-range view of their interests than do others.

In any event two circumstances frequently develop. One is that non-members may derive the same benefits as members without sharing the costs and restrictions imposed on members. Non-union workers often obtain the same benefits of higher wages, shorter hours, and better working conditions

which result from union pressure without contributing to the pressure by which they benefit. Similarly when a group of concerns agree to curtail their production in order to raise prices, independent concerns can benefit by higher prices without sacrificing production, and may even draw business away from the organized group by cutting prices. In fact a small minority of independents might defeat the plans of an organized majority. The second difficulty in maintaining strength arises from the conflicting interests of the members. There are very few organizations in which these do not develop. Some members of the group are in a position to exercise more influence and derive more benefits than other members. At times the policies of the organization may run counter to the interests of some of the members. This appears to have been the case when in 1935 the automobile group withdrew from the United States Chamber of Commerce, and when in 1936 the advocates of industrial unionization split with the advocates of craft unionization who were in control of the American Federation of Labor. Maintaining cohesion essential for strength is no easy task.

*Exercising Strength.* After an organization has developed very considerable strength it may not be in a position to use it. The situation is somewhat like having a 100 horsepower car and not being able to use more than 70. In the first place the lawful use of power may be inexpedient. Its use may bring temporary victory but generate such fear as to bring otherwise diverse groups together in common opposition. Labor organizations often have the power to call a general strike but the dangers encountered are tremendous. Not only are unfriendly employers being bucked, but also friendly employers and even workers in large numbers. Similarly business enterprises may be able to jam through legislation or prevent the enactment of legislation, only to find that they have thereby created new opposition and solidified it with that previously existing. This is likely to lead to embarrassing investigations and more drastic legislation than originally proposed. An instance of this is the previously mentioned

Sherman Act, and it is highly probable that lobbying activities will be subjected to control before long. In the second place the exercise of power encounters legal limits designed to protect the rights of other parties. Violence, for instance, is unlawful. The right of workers to organize, strike, and picket does not give them the right to destroy life and property. Nor can business enterprises legally exercise such pressure as will obviously restrict trade. While there are both violence and restriction of competition, those disregarding the law subject themselves to severe penalties. These penalties are at least a restraining influence on the exercise of privately organized power.

## II. GOVERNMENTAL REGULATION

In an earlier chapter mention was made of three major ways in which productive activity might be conducted. It was noted that the arrangement might be one in which individuals were permitted to do whatever they wanted to do, and do it in substantially any way they saw fit. At the other extreme individual activity might be directed and coordinated entirely by a central authority, whether that authority be a single person acting as a dictator or a highly organized form of government which the people themselves have chosen and which acts for them collectively. Between these extremes there may be an arrangement by which a central authority establishes from time to time the conditions within which and the conditions under which individuals have freedom in economic relations. This is generally known as government regulation of business.

There is a curiously inconsistent view with respect to government regulation. Individuals will argue at one time that in regulating business the government is "meddling" with something that is none of its affair, and then seek aid from the government when their own actions get them into trouble. Farmers are notoriously individualistic, and resent interference with their freedom to farm as they see fit, but they turn

quickly to the government (or the people collectively) for subsidies when nature rebels at their unsound practices. Banks and railroads resent government "interference" with their operations, but when these operations bring them into bankruptcy or to the verge of it they make frantic appeals and exert tremendous pressure for financial and other aid from the government. Enterprises and industries alike usually want freedom for themselves and regulation of their competitors.<sup>1</sup>

While public regulation of business is no cure-all for economic ills it is inevitable under a system of specialized production for private gain. Mention has already been made of the fact that when individuals specialize in producing goods for sale the various specialized groups become dependent upon one another. The pursuit of individual gain brings these groups into conflict. Those things which were private affairs when individuals produced for their own consumption become affairs in which others have interests as specialized production for sale develops. Various groups seek protection for themselves by demanding government regulation of others; these in turn exert pressure for the regulation of still others, and so on indefinitely. Thus the pursuit of private gain through specialized activities brings with it unavoidably the necessity for government regulation of activities.

#### A. TYPES OF REGULATION

From a rivulet, government regulation has expanded into a great stream. The expansion has been irregular but persistent. Freedom to engage in business as well as the actual conduct of business relations has come under government supervision.

*Freedom to Engage in Business.* Restraints on the traditional economic freedom have been least in connection with the freedom of individuals to engage in activities of their own choosing. In addition to those activities which are government monopolies, there are comparatively few sources of eco-

<sup>1</sup> For numerous illustrations of the government getting into business under the pressure of private enterprises see article "The Myth of Rugged Individualism," by Charles A. Beard, in *Harper's Magazine*, December, 1931.

nomic gain from which individuals have been excluded entirely. The Civil War abolished slave trade in this country, white slavery is also forbidden and in some states gambling is illegal likewise. At one time the liquor industry was outlawed, and it may be again. But for the most part restraints have been less drastic and have merely made the engaging in a field of activity contingent either on public need for the service or upon the individual's qualification to perform the service. In a few instances the regulations have been intended to prevent diversification of activities in certain directions, as with the separation of commercial and investment banking.

Qualifications required in order to engage in regulated lines of business may be either personal or financial. Personal qualifications apply mainly to individuals who are in a position to injure the health and physical safety of the public. In some instances health standards are the basis of regulations, as with barbers and hairdressers. If periodic examinations disclose certain diseases, such as tuberculosis and syphilis, the affected individuals are forbidden to practice their trade in the interest of public health. Air pilots must meet minimum requirements as to health, ability, and experience before they are licensed to operate commercial planes. States have established minimum qualifications of training and experience for physicians, dentists, public school teachers, druggists, accountants, morticians, and plumbers. Financial qualifications usually apply to those lines where there has come to be a recognized minimum below which it is unlikely that the enterprise can satisfactorily perform the service which it undertakes, as with commercial banking.

The public need for services in regulated lines of business is likely to be a factor in granting permission to engage in them. This occurs least in the regulated professions and trades where personal services are involved. Permission to establish banks, especially national banks, has long been subject to a demonstrated need for the service of the proposed bank in the place where it is located. In granting broadcasting licenses, the Federal Communications Commission must consider the public

service which the applicant is in a position to render, and the Interstate Commerce Commission is also required to take into account the public need for additional transportation facilities before permitting an expansion of them.

A somewhat new aspect is that of forbidding persons to engage in several lines of business simultaneously. A few years ago the Federal Government refused to grant any mail contracts to airlines which were also engaged in manufacturing aircraft. This led to a separation of transport and manufacturing activities. Recently banks have been forbidden to engage in both commercial and investment banking, but are free to choose between the two. The state of Colorado has imposed such conditions for the serving of meals by drug and department stores that the inroads made by these stores into the business of restaurants and cafés is expected to be stopped.

*Conduct of Business.* Government influence has been more extensive with respect to the conduct of business. Among those aspects to feel the influence of regulation have been prices, quantity and quality of production, deceptive practices, labor relations, and financial arrangements.

Prices are regulated in various ways. In some instances the regulation establishes the exact price or rate, as with the governmentally fixed price of \$35 an ounce for gold. The most minutely regulated prices are the rates charged by enterprises known as public utilities. These prices will be considered separately in a later chapter. At times the regulations pertain merely to a maximum or a minimum price. Several states have prescribed the minimum prices which dealers must pay farmers for their milk and the maximum the dealers may charge their customers. Usury laws prescribe the maximum interest rates which can be collected through court action. In still other instances the influence of the government is exercised to raise or lower prices through competitive operations. During the depression of 1929 the prices of cotton and wheat were bid up by government buying. In an attempt to drive interest rates and financing charges down, the government made funds available for farm and home mortgages and also

for the purchase of industrial bonds. Late in 1935, through its Reconstruction Finance Corporation, the Federal Government purchased a \$100,000,000 issue of the Great Northern Railroad at 4 per cent when private bankers were requiring the issue to carry 5 per cent interest. It has been seen that the Clayton Act attempted to eliminate price discriminations, and even more detailed regulation was provided by the Patman-Robinson Act of 1936, which really was designed to narrow the gap between the prices which can be charged to small and to large quantity buyers.

Quantity of production in numerous lines is subject to government control. The most elaborate and extensive provision for this occurred under the National Industrial Recovery Act, which was declared unconstitutional. Dairy interests of the country have been able to exert sufficient pressure to have a tax placed on oleomargarine, a rival of butter, which serves to curtail the output of this product. Subsidies to shipping interests have served to stimulate the construction and operation of ships, and subsidies to farmers have curtailed the production of agricultural products. Through raising or lowering the tariff on particular products the domestic production thereof can be encouraged or discouraged.

Quality of production is especially likely to be regulated where public health is involved. Both federal and state governments supervise the purity of drugs and some food products. Meat-packers, for example, who are engaged in interstate commerce are subject to the Federal Pure Food Laws, and their products cannot be sold until inspected and passed by agents of the government. There is often extensive regulation by local Boards of Health as to the standards under which food products may be distributed, and in some cases the regulations extend to the conditions under which the products are prepared.

Deception in various forms is capable of furnishing gains for some individuals and enterprises at the expense of others, and these practices have come under considerable supervision. Among practices forbidden by the Federal Trade

Commission are misbranding, adulteration, bribery, false and misleading advertising, disparaging competitors and their goods, and the use of trade names and marks for the purpose of confusing customers of a competitor. Such practices are held to be unfair, not because they may harm consumers, but because they interfere with competition by deliberately injuring competitors. Opportunities for deception as to the quantities of goods contained in packages has been curbed by the requirement that all goods shipped in interstate commerce must show on their labels the quantity contained in the package. In many communities the scales of merchants are subject to inspection at any time as to their accuracy.

Labor relations are regulated mainly in those respects which affect the health and safety of the workers. Hours of work are seldom regulated except for women and children. There is also very little public regulation of wages. But not so with the safety and sanitation of work places. There is also supervision of machinery with a view to eliminating unnecessary industrial accidents. Under Workmen's Compensation Laws employers are required to provide for medical attention and for compensation to workers or their dependents in the event of disabling or fatal accidents. In some instances compensation must be paid for industrial sickness. Only recently has attention been given to protecting workers from the hazards of unemployment and economic old age. Under the Social Security Act employers will be required to contribute a percentage of their payrolls to a fund for the payment of unemployment insurance and old-age pensions. If the National Labor Relations Act is held to be constitutional, employers will be required not only to recognize the rights of their workers to organize as they see fit, but to bargain with them collectively.

Among the regulated financial practices are the methods of accounting, the use of funds, and the issuing of securities. Such regulation applies especially to public utilities and financial institutions. Railroads must follow a uniform accounting procedure prescribed by the Interstate Commerce Commission, and the approval of this body is necessary before

the roads can issue new securities. In the case of commercial banks and insurance companies the use of their funds is regulated. In addition to maintaining the reserves required by law, such concerns are restricted as to the ways in which they may invest their funds. The blue-sky laws of the individual states seek to regulate the activities of dealers in securities with virtually no effective control over the circumstances under which securities may be issued for public sale. If the Securities and Exchange Act is held to be constitutional there will be federal regulation of the conditions which enterprises must meet before their securities can be traded on the organized exchanges of the country. Moreover, there will be increased responsibility by both the issuing company and dealers for losses sustained by investors through misrepresentation or failure to disclose pertinent information at the time the securities are sold.

#### B. BASES OF GOVERNMENT REGULATION

Constitutional provisions furnish the basis for government regulation of business in the United States. Some of these powers are expressed; others are implied by those which are expressed. Chief among the powers for present purposes are those known as commerce, police, taxing, spending, and publicity power. In addition to these which both state and federal governments possess is the postal power of the Federal Government.

*Power to Regulate Commerce.* Specific provision is made for the regulation of business by the Federal Constitution. It provides a division of authority as between state and federal governments. Commerce between the states and with foreign countries is subject to federal jurisdiction, while commerce within a state is under the control of that state. The United States Supreme Court has held that commerce does not include manufacturing. Hence a very large part of business activities are subject only to the direct control of the states in which the enterprises operate. When, however, intrastate commerce, or that within a state, directly affects interstate commerce, or that

between states, the Federal Government has jurisdiction. Thus the Supreme Court held that Federal safety appliance regulations for cars operated in interstate commerce were enforceable with respect to cars operated entirely within a state provided the state movement was along a route used for interstate commerce.<sup>1</sup>

*Police Power.* This is the basis on which the government maintains order. In so far as business relations interfere with public order they may be controlled by authority of the police. This power is usually exercised when the manner in which business is conducted endangers public health, safety, and morals. For instance, the laws pertaining to white slave traffic, purity of foods, and lotteries are based mainly on the police power.

*Taxing Power.* Regulation by means of taxation is nearly as old as the Constitution itself. In the first Congress of the United States (1789) it was proposed to levy a \$10 tax on each slave imported in order to "prevent in some degree this irrational and inhuman traffic." The Federal Government has recently used its taxing power to curtail the accumulation of corporate surpluses, and some states have used their power to curb the operation of chain enterprises. It is reported that as a result of an Iowa tax the Standard Oil Company of Indiana is disposing of all its retail stations to the managers of them. The United States Supreme Court has sustained the use of taxing power for regulation to a limited extent. In the "Triple A" decision of 1936 involving the Agricultural Adjustment Act the court held that federal taxing power when used for regulation was limited to those matters over which Congress otherwise had authority. Thus the government could not use this power to accomplish something which otherwise would not fall under its regulatory power.

*Spending Power.* Closely related to the taxing power is the government's power to spend. It has been widely used by both federal and state governments in granting subsidies to encourage those lines of business deemed necessary for the

<sup>1</sup> *Southern Railway vs. United States; 1911.*

public welfare. Usually these subsidies are given under the guise of payment for some service, such as carrying mail, as in the case of shipping and air lines. Subsidies or gifts have also been given for the construction of vessels. A further use of the spending power occurs when governments undertake business enterprises in competition with private concerns for the purpose of influencing the charges and services of private companies. Moreover, during the 1929 depression the Federal Government expended huge sums for public work and for subsidizing farmers with a view to stimulating business activity.

*Publicity Power.* Publicity is a device which has been used with varying success in business regulation. The underlying idea is that the light of publicity will have a corrective influence on questionable business practices. For some years the Federal Trade Commission has been the chief agency through which business practices have been investigated and given publicity. At present the Securities and Exchange Commission gives publicity to the salaries paid executives by the corporations whose stock is traded on the exchanges of the country.

*Postal Power.* The control of the Federal Government over the United States mail service is referred to as the postal power. In performing this service the government has authority to exclude from the mails all matter which is fraudulent, illegal, or obscene. When a "fraud order" is issued against a concern, that concern is forbidden to distribute its circulars, letters, etc., through the mail service. This cuts off an important means of communication, and is frequently an effective means of curbing business activities of an unlawful character.

### C. LIMITATIONS TO GOVERNMENTAL REGULATION

In a broad sense there are no limits to the regulatory power of the government. When pressure for extension of power becomes sufficiently great the extension occurs in one way or another. Not only may an existing form of government be overthrown, but under a constitutional form there may be amendments to the constitution such as the one which outlawed the

liquor industry for a number of years and a Civil War may be the means of reversing a Supreme Court decision as in the Dred Scott case. These possibilities might well be kept in mind by those private enterprises which seem to assume that they have a right to exist whether or not they serve the public satisfactorily. But in a narrower sense there are limitations at any given time to governmental regulation. In the first place legislation must be enacted. If the constitutionality of the legislation is contested it must be passed upon by the courts, and even if the legislation is held to be constitutional its operation may be highly unsatisfactory.

*Passage of Laws.* More difficult than often realized is the enactment of laws by legislative bodies. Usually no difficulty is encountered in getting tentative drafts of laws submitted to these bodies. Legislators are generally willing to introduce even the most trivial measures presented to them by their constituents. Introducing a measure is a formality and merely starts a bill on its journey to the waste-basket or to further consideration. Whether or not the bill will ever be reported out of committee depends on the pressure exerted on the committee and whether the committee reports favorably or unfavorably also depends largely on the pressure which opposing groups can exert. When the legislators vote upon a measure, amendments may be proposed which are likely to furnish further difficulties and delay the vote. Even when the vote is taken one body may pass the measure and the other reject it, and although both bodies may pass it, the Chief Executive may veto it, as did several Presidents in the case of the Soldiers' Bonus Bill. When this happens, the measure must be returned to the legislative bodies, where it may be defeated on second vote or may be passed over the veto. Trivial proposals may become laws, but rough sailing during the legislative journey eliminates most measures of this kind, as well as important measures for which the proponents were unable to exert as much pressure as the opponents. Those measures which finally come through the legislative mill are likely to represent bargaining and compromises between opposing forces.

*Constitutional Hurdle.* After legislation has been enacted the constitutional hurdle must be cleared. Seldom can regulatory legislation avoid this hurdle. The chief constitutional barriers are those which relate to the rights of persons and to the respective jurisdiction of state and federal governments.

The rights of persons are set forth in the "due process" clauses of the Federal Constitution. These clauses forbid either state or federal governments to deprive any person of life, liberty, or property without due process of law. As noticed in an earlier chapter, liberty has been interpreted to mean not only bodily freedom but also the freedom to make contracts. Such freedom may be regulated, but it must be done in a reasonable and impartial manner. If persons subject to the regulation believe it to be unreasonable, partial, or oppressive in nature, they have a right to present their case in court. If, however, the court deems the regulation to be a proper exercise of legislative power the act is declared constitutional and becomes enforceable despite opposition to it.

Jurisdiction of federal and state governments has long been a source of confusion and uncertainty. It has been seen that under the commerce clause of the Constitution the Federal Government has control over international and interstate commerce, whereas commerce within a state is under the control of that state. No satisfactory line of separation, however, has ever been established between commerce within and commerce between states; for example, coal in Pennsylvania was held to be under state jurisdiction until the cars in which it was loaded began to move, but in West Virginia natural gas was not held to be subject to control by that state even before the gas was placed in pipelines for transportation. Nor has the decision of the Supreme Court that manufacturing was not commerce furnished a clear-cut separation between federal and state jurisdictions. Hogs which were raised, slaughtered, and consumed in Kansas were held to come under federal jurisdiction because they were inseparably fused in the great stream of interstate commerce. In other words, when com-

merce within a state directly affects commerce between states, the business within a state is subject to federal control, but not if the intrastate business interferes only indirectly with interstate commerce. In the decision declaring the National Industrial Recovery Act unconstitutional, Chief Justice Hughes contended that the distinction between direct and indirect interference was "clear in principle" even though "the precise line may be drawn only as individual cases arise." This seems equivalent to saying that the Supreme Court reserves the right to decide where the line shall be drawn in any particular case.

Whether or not one agrees with the views taken by the Supreme Court in interpreting the proper limits of legislation, the fact remains that this body has tremendous power in shaping regulation. In fact the Court exercises greater veto power than any other similar tribunal in the world, and is sometimes considered a super-legislative body by virtue of its life-and-death power over legislation. For example, the particular interpretation which the Court has seen fit to put upon the "due process" clauses interferes with regulation of wages and hours of work. And its interpretation of the commerce clauses has prevented federal regulation of child labor. It will be recalled that when the Sherman Act stated that every contract in restraint of trade was unlawful the Court decided that only those which restrained trade unreasonably were unlawful.

*Operation of Legislation.* Even after laws have jumped the hurdle of constitutionality, there is no assurance that they will operate satisfactorily. In some cases the effectiveness of regulation depends upon its scope. Local legislation may create more problems than it solves if the economic forces involved are beyond the control of the legislation. Compulsory unemployment insurance in one state, when other states do not have similar requirements, may create additional unemployment in the first state through the shifting of enterprises to other states in which there is not similar regulation. When a few years ago state regulation of the New York Stock

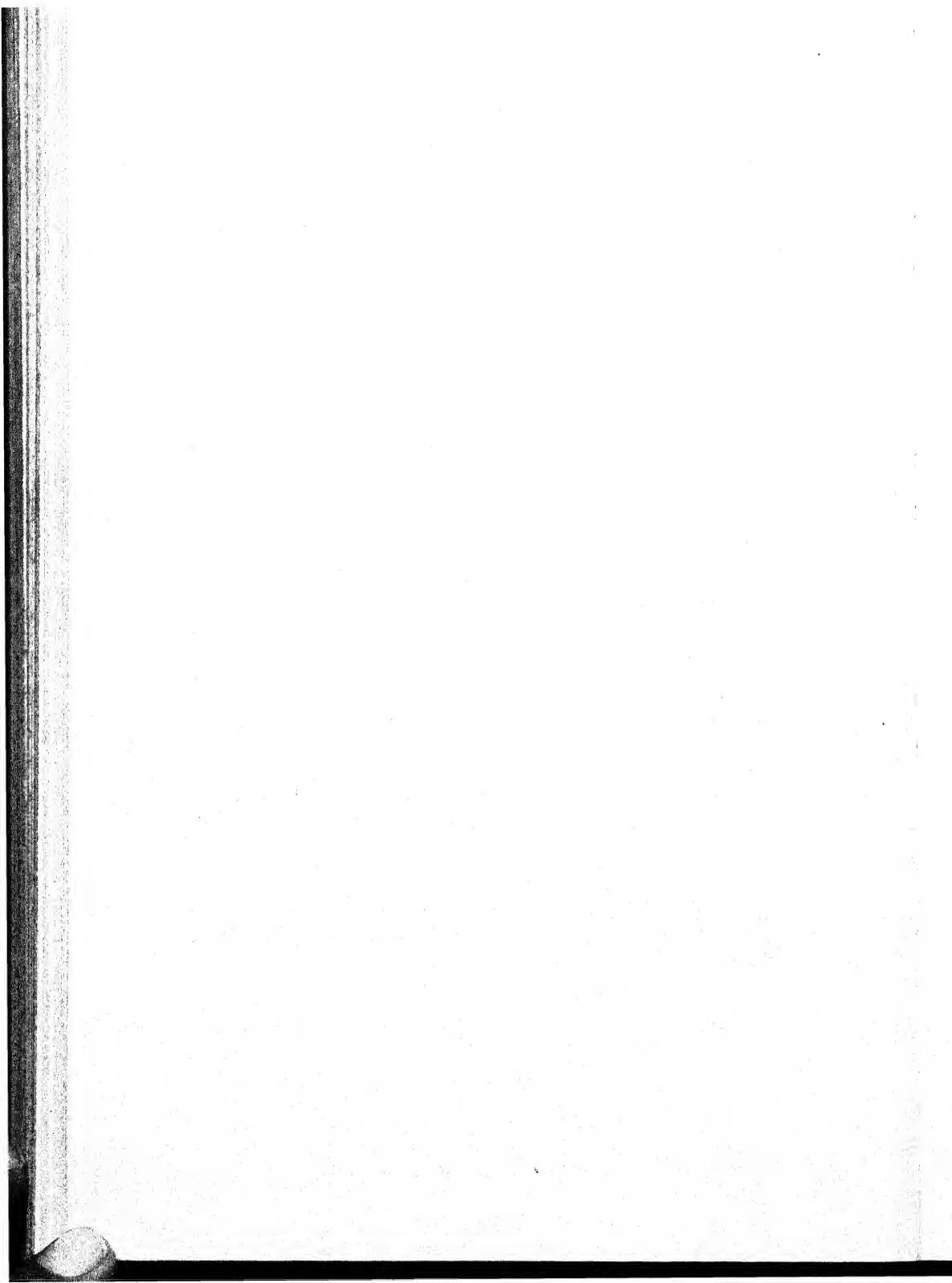
Exchange was attempted, the Exchange threatened to transfer most of its operations to the State of New Jersey. On the other hand, legislation which is wider in scope than the problem itself may create more havoc and disorder than the condition it was intended to remedy. Closely allied with the scope of legislation is the confusing multiplicity of federal, state, and local laws. At present the situation has reached a point where unintentional violation is almost unavoidable and deliberate violation is encouraged. A plea of ignorance is often sufficient to avoid prosecution for the first offense, and technicalities may provide reasonable safety for a second. Not least important among the limitations of regulatory legislation is its enforcement. Knowledge that inadequate funds are available for enforcement operates to increase violation and prevents an impartial administration of the law. Bribery of officials is not an uncommon means of purchasing protection from the law for one's self and of persuading officials to enforce the letter of the law on one's competitor. In some instances public service commissions are composed largely, if not entirely, of persons who are the bribed agents of concerns included among those which the commission is expected to regulate.

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The existence of voluntarily formed groups which exert pressure for the protection and advancement of their own interests is unavoidable under a system of private business. Such pressure makes necessary more government regulation than would otherwise be required. Even in the absence of it the extensive specialization and the dominating influence of large-scale enterprises which characterize modern business would require public regulation. Some of it would be needed to curb various types of conflict which develop in the quest for private gain and some is essentially of a managerial type in that it serves to direct and coordinate productive activity more effectively for the public good. Many aspects of regulation would be clearly recognized as management if enterprises were governmentally operated.

### QUESTIONS

1. "There is a clear line of separation between management and regulation; management is control by those who have an interest in the business and regulation is control by those who do not have an interest in it." Evaluate.
2. On what must privately formed organizations depend for their regulatory power?
3. What determines the geographical scope of privately formed bodies exercising regulatory power?
4. Distinguish between internal discipline and external pressure.
5. In what ways may private organizations exercise economic control?
6. Through what mediums do private organizations exert political pressure?
7. "Neither establishing nor maintaining the strength of private organizations is an easy task." Explain.
8. In what sense, if any, may private organizations have more strength than they are in a position to use?
9. As between economic and political pressure, which has been used most extensively by labor organizations? Why?
10. Have trade associations relied as heavily on the same type of pressure as labor unions?
11. "Government regulation is inevitable under a system of specialized production for private gain." Explain and evaluate.
12. On what basis may restrictions be imposed on the freedom to engage in business?
13. As between the freedom to engage in business and the freedom to conduct business, in which has the greatest regulation occurred?
14. Indicate some of the ways in which the terms of trade are regulated.
15. Along what lines has there been regulation of business practices?
16. Explain the bases on which the regulatory power of government may rest.
17. Is it your impression that the division of authority under the commerce power facilitates the regulation of business or makes it difficult? Explain and point out what is meant by the division of authority.
18. "The number of laws enacted every year is proof that legislation can be enacted easily." Evaluate this statement.
19. What are the chief constitutional barriers to regulatory legislation?
20. "The legal and the economic soundness of legislation are two quite different things." Explain.

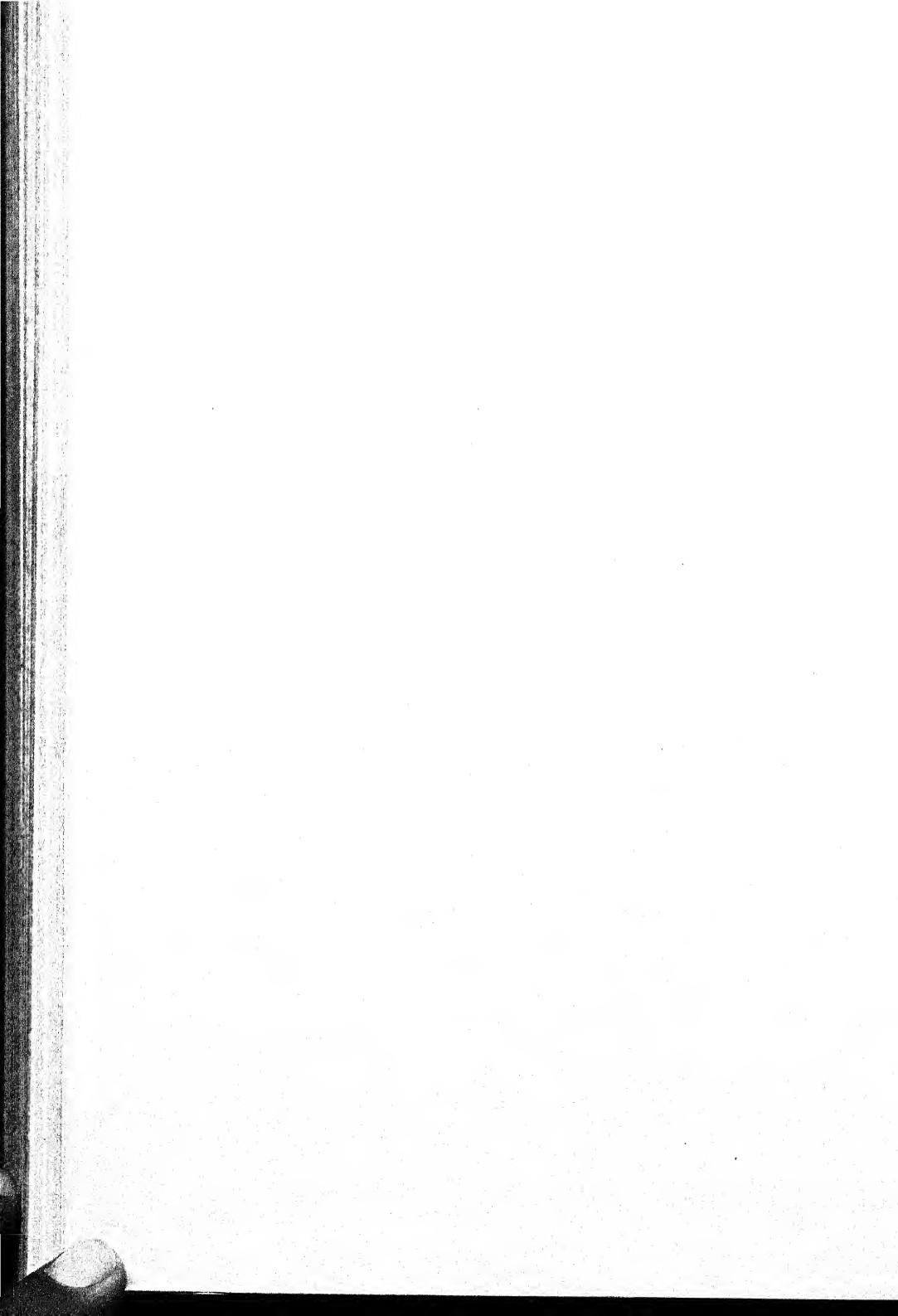


PART FOUR



*How Prices are  
Determined*





## CHAPTER XVI

### DEMAND AND SUPPLY

WITH specialization in the production of goods, and with them being traded through the medium of money, the prices at which commodities and services exchange necessarily play an important part in economic affairs. The incurring of costs by business concerns is influenced by the prospect of recovering these costs through selling prices of goods and the prices which must be paid influence the costs to be recovered. How extensively final consumers can afford to buy goods depends on both the prices they must pay for the things they want and the prices they receive for the things they sell. In an earlier chapter the forces which affected the level of prices for goods in general were examined and at that time attention was called to the fact that the prices of all goods did not move together. When the general level of prices remains the same, the prices for some goods may be increasing and those for others decreasing. If the level of prices in general is rising or falling, the prices for some goods lead the general movement and others lag behind, while still others may either remain constant or move in a direction opposite to the general change. Our attention here centers in the forces affecting the prices of particular goods, such as bread, furniture, garments, houses, locomotives, etc. In considering these prices the general level of prices will be assumed to remain unchanged.

The forces which determine prices for particular commodities or services are sometimes referred to as demand and supply. Both terms are merely shorthand expressions and do not disclose the circumstances and conditions which cause prices of particular commodities and services to be what they are. To say that demand and supply determine prices is almost equivalent to saying that something determines prices. For many purposes the important consideration is what this something is.

Consequently the first step in examining the forces is to notice the meanings, conditions, and types of demand and supply.

## I. DEMAND

### A. MEANING OF DEMAND

The term "demand" is used in different ways. It is sometimes used to indicate the desire for a thing. Thus it may be said that there has always been a demand for diamonds. Presumably the thing desired is useful for some purposes. Or the term may refer to the need for something, as in the statement that starving people demand food or that a seriously injured person demands medical attention. But something more than the wants (either needs or desires) must exist in order to create demand in a trading sense. In addition to the willingness to buy which is created by the wants there must be the ability to

buy. Only when there is both willingness to buy and ability to offer something in exchange does demand exist in a trading sense.

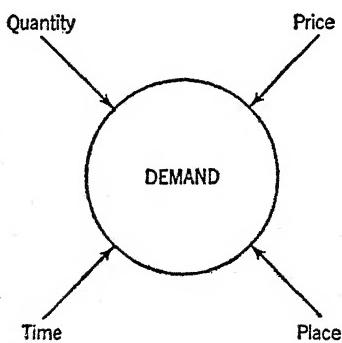


FIGURE 38. ELEMENTS INCLUDED IN DEMAND

While willingness to buy combined with purchasing power gives rise to demand, the demand itself involves four elements. In the first place there is a willingness to buy particular quantities. Even if prices did not have to be paid for goods, any one commodity or service would not be

wanted in unlimited amounts. When, however, prices must be paid, the price itself influences the quantity which will be purchased. Then, too, the quantity which will be purchased and the price which will be paid depend upon circumstances of time. More will be paid for theater tickets on holidays than on other days; more coal will be purchased in winter than in summer. Finally, the place where the goods are wanted also

exerts an influence. A larger quantity of rubber is wanted in the United States than in all other countries of the world combined; higher rentals will be paid for homes in a residential than in an industrial section of a city. Thus demand refers to the relation which exists between quantity and price at any given time and place. This is illustrated by Figure 38.

#### B. TYPES OF DEMAND

*Market Demand.* At any given time in a market there is a certain quantity of a commodity or a service which will be purchased at a particular price. For instance, it is reported that the Columbia Gas and Electric Company is planning to run a natural-gas line to Detroit, and estimates a yearly consumption of gas in that city of 25 billion cubic feet at a price of 34 cents per thousand cubic feet. This is an estimate of market demand. There is a certain time, place, quantity, and price involved. The term also applies to the number of persons who will pay a particular price to witness some event, such as a boxing match, at a given place and time.

While the term "demand" when used in a trading sense always involves a particular time and place, these elements are flexible. For some purposes the time may be a year or more and for others less than a day. The extent to which trolley accommodations are wanted in a city between the hours of eight and nine in the morning and five and six at night is quite different from that between other hours. If goods can be stored, the significant period of time may be a year, as with staple crops. The place or area may be a local market covering only a few city blocks, as with a neighborhood drugstore, or it may extend over cities, states, and even nations.

*Schedule Demand.* The quantity which will be purchased at a particular price, however, is not likely to be the only quantity which would have been purchased at the same time and place. The quantity which will be purchased is influenced by the price. Consequently, a complete description of the willingness and ability to buy requires that consideration be given to the different quantities which would be purchased at

different prices in a market at a particular time. Such a series of quantities and corresponding series of prices is sometimes known as a schedule demand. Whereas the market demand emphasizes the particular quantity which will be taken at a particular price, the schedule demand stresses alternative quantities which will be purchased depending upon price.<sup>1</sup> The United States Department of Agriculture made an estimate in 1930 of the probable relation in this country at that time between the size of the potato crop and the average price of the product when the farm prices were adjusted to the general level of food prices in 1928. It was found that a crop<sup>2</sup>

Size of Crop (Million bus.)	Price
320	\$1.80
360	1.40
400	1.08
440	.80
460	.65

of around 320 million bushels tended to sell at an average price of about \$1.80, while a crop of 360 million bushels would tend to average approximately \$1.40 a bushel. Estimated prices for other quantities are indicated below.

It is sometimes convenient to represent graphically a demand schedule for a commodity or service and this is done for potatoes in Figure 39. Quantity is measured along the base line and price along the vertical line. Ordinarily only some quantities and their prices are known, as indicated by the dots; the line connecting these dots enables estimates to be made as to the probable relation between other quantities and prices, provided the gaps between known amounts and prices are not too great. For instance, the above figures do not indicate the price at which a crop of 340,000,000 bushels would sell. But the chart indicates that this quantity would probably sell at an average price of about \$1.60 a bushel. The vertical line

<sup>1</sup> The term "demand schedule" may be used when factual knowledge exists as to the quantities which will be taken at corresponding prices.

<sup>2</sup> Some part of the crop is retained by farmers for their own use, but it is probable that changes in the size of the crop reflect changes in the quantities sold.

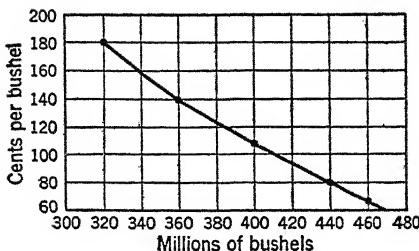


FIGURE 39. DEMAND SCHEDULE FOR POTATOES

at 340,000,000 bushels meets the line representing the demand schedule at a point opposite \$1.60, thus suggesting the probable price around which that quantity would sell at the given time and place.

From the demand schedule for potatoes it will be noticed that a larger quantity will sell at a lower price per bushel and a smaller quantity at a higher price. Thus as the crop increases from 320 to 460 million bushels the price falls from \$1.80 to 65 cents. Since quantity and price change in opposite directions the relation between them is said to be inverse and it is indicated on the chart by the direction of the demand line being downward and to the right. The downward movement indicates lower prices and the movement to the right indicates larger quantities. Such an inverse relation between quantity and price at a given time and place is not peculiar to potatoes, but holds for any other commodity or service. So general is the application of this tendency that it is known as the Law of Demand. The usual statement of the law is that at a given time and place the quantity of a commodity or service which will be taken varies inversely with the price. Presently the reasons for this tendency will be considered.

While the quantity of most commodities and services which will be purchased at any given time in a market varies inversely with price, the relation between quantity and price is more sensitive in some cases than in others. The customary distinction on this basis is that of elastic and inelastic demand.

*Inelastic Demand.* When the quantity of a commodity or

service which will be purchased at a given time and place is not highly sensitive to the price changes, demand is inelastic. This is especially likely with necessities such as bread and salt, and with such low-priced goods as newspapers and ink. A test of inelastic demand is the change which occurs in the aggregate expenditure for a commodity or service as between different prices. When quantity is not highly sensitive to price, a smaller total expenditure will be made at a lower than at a higher price. Viewed the other way, the total expenditure will be greater at a higher than at a lower price. The previously used illustration of potatoes indicates an inelastic demand. As the price decreases from \$1.80 to 60 cents a bushel, the total expenditure falls from \$576,000,000 to \$299,000,000, as shown below.

Size of Crop (Million bus.)	Price	Total Expenditure
320	\$1.80	\$576,000,000
360	1.40	540,000,000
400	1.08	432,000,000
440	1.80	342,000,000
460	.65	299,000,000

Thus farmers receive less for a larger crop than for a smaller one. The explanation for this is that as price declines, the expansion in quantity of sales is not sufficient to offset the influence of a lower price and a smaller total expenditure results. On the other hand, with a higher price the contraction in quantity is not sufficient to offset the influence of the higher price and a larger total expenditure results.

*Elastic Demand.* When the quantity which will be purchased is highly sensitive to price changes, the demand is said to be elastic. An instance of this occurs with apples, according to an estimate made several years ago by the United States Department of Agriculture. The average price at which different size crops would tend to sell when prices were adjusted to the 1928 level of food prices in general is indicated below. Here, as with potatoes, it will be noted that there is an inverse relation between quantity and price. As the size of the crop increased from 100,000,000 to 240,000,000 bushels the price fell from

Size of Crop (Million bus.)	Price	Total Expenditure
100	\$1.60	\$160,000,000
140	1.30	182,000,000
160	1.20	192,000,000
200	1.00	200,000,000
240	.90	216,000,000

\$1.60 to 90 cents, but the aggregate expenditure at lower prices increased. Whereas a crop of 100,000,000 bushels selling at \$1.60 a bushel yielded growers an aggregate income of \$160,-000,000, a somewhat larger crop of 140,000,000 bushels selling at a lower price of \$1.30 yielded a larger income of \$182,000,000. The reason for this is that quantity is so sensitive to price that at a lower price the amount purchased increases more than enough to offset the influence of the lower price. At a higher price the contraction in quantity which will be purchased is so great as to reduce the aggregate expenditures. Viewed in the opposite way, buyers expended less when they had to pay higher prices for a smaller crop than when they paid lower prices per bushel for a larger crop. This highly sensitive relation between quantity and price is especially likely to occur with goods which are not considered necessities.

*Elastic and Inelastic Demand Compared.* The contrast between elastic and inelastic demand may be illustrated by the wholesale demand for milk in New York City at two different periods of time. In 1908, with a one-cent decline in price from 7 to 6 cents a quart, the quantity taken would have increased from about 38,000,000 to 40,000,000 quarts, as indicated by the diagram on the left of Figure 40. Between these points the demand is elastic. But in 1923 the same change in price would have resulted in a much greater increase in the quantity taken, as shown by the right-hand diagram. Here the demand is elastic between the same points.

This difference between elastic and inelastic demand is extremely important when attempts are made by sellers to increase their gains through curtailing the quantity available for sale. Through concerted action there are possibilities for gain when the demand is inelastic, but not when it is elastic. The

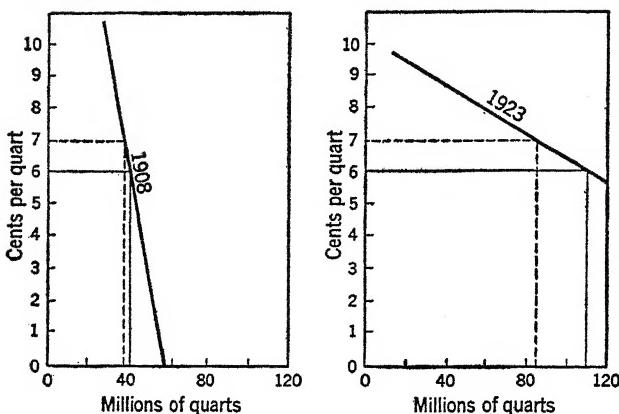


FIGURE 40. ELASTIC AND INELASTIC DEMAND AS ILLUSTRATED BY WHOLESALE DEMAND FOR MILK IN NEW YORK CITY

From "Studies in Demand: Milk and Butter," by Gilboy  
in *Quarterly Journal of Economics*, August, 1932.

failure to realize this appears to have been rather costly to the mackerel-fishing industry during 1934 when an attempt was made to increase profits by curtailing the mackerel catch on the New England shores. The week before the regulation went into effect, over 1,500,000 pounds of mackerel were landed and, with an average price of 1.3 cents, resulted in a gross return to the fishermen of about \$20,000. During the first week of regulation the catch was reduced to 614,000 pounds and the price was increased to 2.4 cents, giving a total return of only \$15,000. The next week the catch was further restricted to 420,000 pounds and the price increased to 4.4 cents, but still the total receipts were not so large as for the original catch, even though costs of operation remained the same. Finally the regulations were abandoned, and during the first week of unregulated catch the price fell from 4.4 cents to 2.2 cents, but with a much larger catch of 1,250,000 pounds the total income to the fishermen was increased to \$27,000.<sup>1</sup>

In addition to inelastic and elastic demand, there may be

<sup>1</sup> See *The Consumer*, issued by the Consumers' Division, National Recovery Administration, vol. 1, No. 3, November 15, 1935, p. 8.

cases where the aggregate expenditure remains the same for different quantities at different prices. Thus if 250 ties were purchased at \$2 the total expenditure is the same as for 500 ties at \$1. When such a relation exists between quantity and price at a given time and place the demand is said to have an "elasticity of unity."

Finally it may be noted that the quantity may respond differently to price at different points on the schedule. Between some points there may be an elastic demand, between others the demand may be inelastic, and between still others there may be an "elasticity of unity." Suppose that in a market at a given time prospective buyers stood ready to take the following quantities of a gadget at the following prices:

Quantity	Price per Unit	Total Expenditure
1000	.90	\$900
2000	.70	1400
3000	.40	1200
4000	.30	1200

A larger quantity will be taken at a lower price in each instance, but the responsiveness of quantity to price is not the same for all prices. The quantity which would be taken at 70 cents is sufficiently greater than at 90 cents to offset the influence of the lower price and the aggregate expenditure by purchasers would increase to \$1400. Here the relation is elastic. But the quantity which would be taken at 40 cents is not sufficiently greater than the quantity which would be taken at 70 cents to offset the influence of the lower price per unit, with the result that the aggregate expenditure of buyers declines to \$1200. Between these points the relation is inelastic. At a still lower price of 30 cents the increase in quantity is just sufficient to balance the influence of the lower price, so that the aggregate expenditures would remain the same. As between these points the demand has an elasticity of unity.

#### C. LAW OF DEMAND

It has been seen that at any given time and place, the quantity of a commodity or service which buyers will take varies

inversely with the price and that this relationship is so universal as to be designated as the Law of Demand. Before considering the circumstances responsible for this relationship, it may be helpful to notice that this tendency may be obscured by changes in the general price level. During the prosperity phase of the business cycle when the prices of goods in general are rising there is a tendency for quantities of goods purchased to increase as prices rise, through fear of still higher prices if purchases are postponed. On the other hand, during the period of contraction the declining prices may curtail rather than stimulate buying since prospective purchasers may await still lower prices. Thus quantities and prices tend to move in the same rather than in different directions as stated by the Law of Demand. The seeming contradiction is accounted for by the fact that the Law of Demand emphasizes the alternative quantities of a commodity or service which at a given time and place would be taken depending upon the particular price at which the goods were then being sold. The law does not attempt to describe the relation between quantity and price over a span of time during which prices in general are changing.

*Differences in Incomes.* One of the circumstances responsible for the law of demand is differences in incomes which individuals have to spend for goods. Few persons have sufficient income to enable them to buy every commodity or service they want in whatever quantities they want it. The vast majority must make choices and allocate their income in different directions if the maximum satisfactions are to be derived from the spending of income. Many persons who desire to see the Army and Navy football game are prevented from doing so merely because they cannot afford to purchase tickets at the price charged. Indeed some of these probably would derive more enjoyment from the game than those who can afford to pay the required price. When it is said, however, that a person cannot afford to purchase a ticket, this does not necessarily mean that the individual does not have the amount of money required to obtain a ticket of admission. It may, and often does, mean that even though watching the game would be highly enjoyable

the benefit would be too costly in terms of other things which would have to be sacrificed in order to purchase the ticket. Too large a part of a limited income would be required for a single purchase. Only when a ticket could be bought at a lower price would these people be in a position to obtain sufficient satisfaction from watching this famous athletic contest to warrant sacrificing the purchase of some other things they also want. The same situation holds with respect to the purchase or the rental of most other goods, and holds with business enterprises as well as with ultimate consumers. Two firms may be equally desirous of obtaining a bookkeeping machine but not equally able to buy it. The more prosperous concern can afford to purchase it at a higher price than would attract the less prosperous firm.

Not only are there differences in income, but the differences are such that the number of income receivers tends to increase as the size of their income diminishes. In other words, there is a great bulk of persons with small incomes as against a comparatively few with large amounts at their disposal. The lower the price at which any commodity or service can be purchased the more persons who desire to buy it can afford to do so. Since the aggregate quantity which will be purchased in a market at any time is a combination of the quantities which individual customers are willing and able to buy, there is a tendency for a larger total quantity to be purchased at a lower than at a higher price.

*Differences in Desires.* Even when persons have the same income they do not necessarily have the same interests, tastes, and desires. Since most persons have more desires than they have income to satisfy, they tend to choose between goods on the basis of the relative satisfactions they will yield. Some persons derive more pleasure from the clothing they wear than from the food they eat; some derive more satisfaction from an orchestra concert than from a moving picture; a well-furnished home is more attractive to some people than having life insurance. A person who enjoys traveling will sacrifice other things in order to obtain the funds with which to satisfy this

particular desire. For goods of any kind there are gradations of desires, and individuals will pay more for the things which furnish them more, rather than less, satisfaction. Lower prices therefore serve to attract customers whose desire for the goods would not induce them to buy at the higher prices.

The same tendency holds with business concerns. They likewise seldom have sufficient income to acquire all the things which they might like to have or for which they have some use, even though small. Two concerns owning delivery trucks might be equally prosperous and financially able to keep them attractively painted. The one company might consider this an effective means of advertising whereas the other was doubtful on the point. Whatever the validity of the views may be, the former concern would be willing to pay higher prices for the painting of its trucks than would the latter.

*Diminishing Usefulness.* With some goods, purchasers have use for only one unit or a small quantity, while with other goods a flexible amount can be used. Ordinarily there is need for only one furnace in a home, although a number of floor lamps might be desired. When the quantity desired is not a fixed amount, the usefulness of additional units tends to diminish after a certain point has been reached. In decorating the rooms of a home a few movable lamps may be deemed essential, although several additional ones might further improve appearance and increase the convenience of illumination. But as the number increases the usefulness of additional ones diminishes. The higher price at which a few might be purchased will not warrant the purchase of additional ones. Only at lower prices can further sales be made. This tendency reflects itself in the market price for cigarettes when a packet sells at 15 cents or two packets for 25 cents. Here a discount of  $33\frac{1}{3}$  per cent is allowed for the purchase of a second packet at the same time the first is purchased. In selling a set of tires, dealers may throw in a tire for the spare wheel at a lower price than that charged for the other four. That the extra tire may become very useful at a later time does not alter the fact that at the time of purchase it had less usefulness than

the four which were then needed for the operation of the car.

With business enterprises the same tendency is found. A concern generating its own current may find it expedient to carry a half-month's supply of coal on hand, but might find it advantageous to increase this to a month's supply if the price were lower. Similarly concerns might prefer carrying spare parts for some of their machinery, even though the parts might never be used, rather than experience delays in getting them when, if, and as they were needed. But the extent to which this is done will be greater at lower than at higher prices.

#### D. CHANGES IN DEMAND

Thus far emphasis has been on the quantities of a commodity or service which, at corresponding prices, will be purchased in a market at a given time. The fact that a larger quantity will be bought at a lower than at a higher price does not mean any change in schedule demand. If automobile manufacturers reduce prices and more cars are purchased, this does not represent an increased demand. Rather it represents a conversion of potential demand into active demand. Persons who were formerly willing to buy and who had insufficient ability to do so at the then prevailing prices, now find their ability increased through a reduction in prices. Similarly if prices are advanced and fewer cars are purchased, this does not represent a decrease in schedule demand. No change has necessarily occurred in the willingness or in the ability to pay, but a change has occurred in consumers' ability to *buy* because of the higher price charged for the same product. In both cases the change has been in the conditions of supply rather than of demand.

Conditions of demand, however, may be different at one time than at another. Changes may occur in the quantity taken or in the price which will be paid. At different times the same quantities may be taken but not at the same price, or perhaps the quantities differ while the price remains the same. By an increase in demand is meant that at one time in a given market either a larger quantity will be taken at the same

price or the same quantity will be taken at a higher price than at another time in the same market.

These changes are illustrated in Figure 41. The middle line, D-1, represents the original demand schedule; the upper line, D-2, illustrates the demand schedule at a different time; while

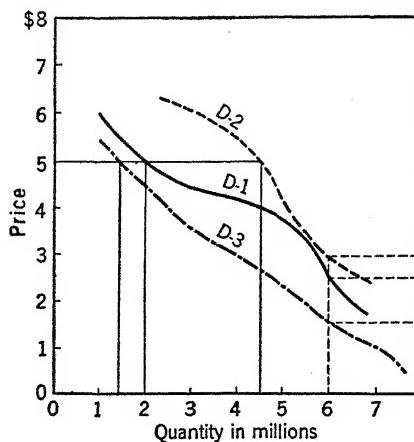


FIGURE 41. ILLUSTRATION OF CHANGES IN DEMAND SCHEDULE

the demand at a still different time is represented by the lower line, D-3. Originally, at a price of \$5 a quantity of 2,000,000 units would have been purchased, as indicated by line D-1. With an increased demand, as suggested by line D-2, a quantity of 4,500,000 units would have been purchased at the same price. But with a decreased demand, as shown by line D-3, only 1,500,000 would have been taken at \$5. If emphasis is shifted from changes in quantity to changes in price it will be noticed, by following the light broken lines at the right of the chart, that on the basis of the original demand 6,000,000 units would have been taken at a price of \$2.50; with an increased demand (D-2) the same quantity would have been taken at \$3; while with a decreased demand (D-3) that quantity would have been taken at only \$1.50.

There is also the possibility that over a period of time a change may occur in the elasticity of the demand schedule.

This has been illustrated in Figure 40, which showed the New York City wholesale demand for milk in 1908 and 1923. In the earlier period the demand was distinctly inelastic, while in the later period the demand had not only increased but had become distinctly elastic. In other cases a demand which was originally elastic may tend to become inelastic.

## II. SUPPLY

### A. MEANING OF SUPPLY

Just as the term "demand" may or may not be used in a trading sense, so with the term "supply." Sometimes it refers merely to the existence of a thing. For example, when it is said that the world's supply of oil is unevenly distributed among the nations, reference is made to the existence of petroleum resources. But the existence of a thing does not necessarily mean that it is available for use. In some cases it is the availability to which reference is made as when it is said that manufacturers seek to supply their dealers promptly. Frequently the term relates to the quantity or amount of goods. Such is the case in the statement that retail stores carry large supplies of merchandise at the Christmas season.

In a trading sense supply involves the same four elements as does demand. Goods of any kind are not furnished for sale in unlimited quantities. When goods are available in such quantities, they cannot command any price, as in the case of air. Generally the extent to which goods are furnished depends upon the payment of a price. Thus supply involves a relation between quantity and price. But what this relation may be depends upon circumstances of time and of place. The same relation which exists at one place may not exist at another, and that which prevails at one period of time may not at another. The quantity which will be furnished at a given price in a period of depression may be much more than in a period of active business. While trading areas are interconnected, the links are not such that there may not be price differentials between places at the same time. Subscription rates for magazines published in

the East are often lower there than in the West. For purposes of trade, therefore, supply has little or no meaning unless elements of quantity, price, time, and place are considered as suggested by Figure 42.

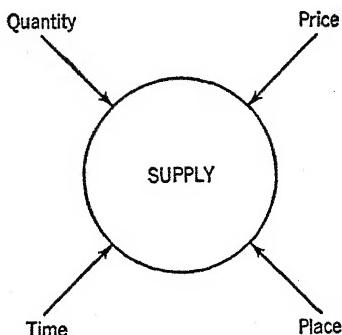


FIGURE 42. ELEMENTS INCLUDED IN SUPPLY

#### B. TYPES OF SUPPLY

*Competitive and Non-Competitive Supply.* When the quantity of goods which is furnished in a market at any given time is dictated by the independent decisions of rival suppliers in response to the prevailing or expected market price over which no one seller has control, the

supply may be said to be competitive. On the other hand, when the price itself is regulated or the output regulated with a view to controlling price the supply is said to be non-competitive.

*Market Supply.* The quantity of a commodity or service which sellers as a group stand ready to furnish at a particular price in a market at a given time is referred to as the market supply. Whatever quantity prospective sellers offer at particular prices is not necessarily the quantity which they actually sell at that price, and for some purposes market supply refers to the quantity sold rather than the quantity offered. For our present consideration the readiness to sell at a particular price is the distinguishing feature of a market supply.

*Schedule Supply.* Usually the quantity which producers as a group stand ready to furnish at a particular price is not the only quantity they would be willing to furnish at the same time and place. In so far as the quantity is responsive to price there is a tendency for the quantity offered at any given time and place to vary directly with the price. Larger quantities will be offered at higher prices than would be offered at lower ones. Thus the following schedule might represent the alternative

quantities of a given grade of women's hats which would be furnished at corresponding prices in a market at a particular time:

Quantity (Millions)	Price
1.0	\$1.00
1.5	1.50
3.0	2.00
4.0	3.00
5.0	4.00

On this basis 1,000,000 would be offered at \$1, whereas, if the price were \$1.50 at the same time, the quantity offered would be 1,500,000. This tendency for quantity to vary inversely with price is illustrated by Figure 43.

The tendency which is often encountered in a market at a given time for the quantity of a commodity or service offered for sale to vary directly with the price is sometimes referred to as the "Law of Supply." But this tendency is not sufficiently widespread in its application to justify its designation as a law. The conditions under which goods are created in some cases and those under which sale occurs in others may result in the price having no consistent relation to the quantity offered at any given time in a market. In some cases a higher price serves to curtail the quantity which will be produced, and in others a low price may not diminish the quantity offered. The former may arise with a monopoly and the latter may occur even under competition when goods are produced jointly.

*Elastic and Inelastic Supply.* When the quantity of a commodity or service offered for sale responds directly to price changes, the response may be more sensitive in some cases than

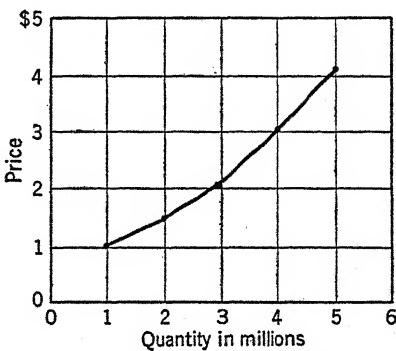


FIGURE 43. SUPPLY SCHEDULE FOR HATS

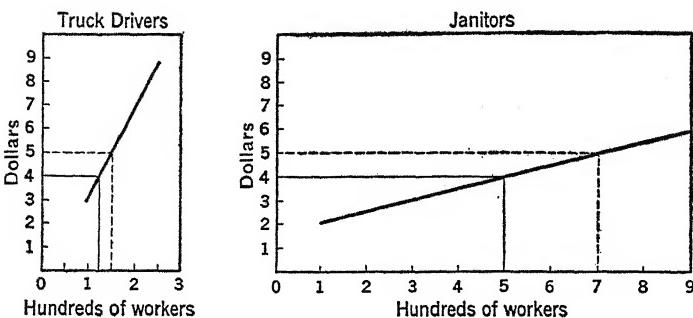


FIGURE 44. ELASTIC AND INELASTIC SUPPLY ILLUSTRATED

in others. If a given change in price results in proportionately greater change in quantity offered, there is said to be an elastic supply. Thus a 5 per cent higher selling price might bring a 10 per cent increase in the quantity offered for sale. On the other hand, when a given change in price results in a proportionately smaller change in quantity, the supply is said to be inelastic. For instance, a 15 per cent higher price might result in only an 8 per cent increase in the quantity furnished.

The difference between elastic and inelastic supply is illustrated in Figure 44. Suppose that at a wage of \$4 a day about 125 workers offer their services as truck-drivers, but with a wage of \$5 the number is increased to 150. Here the supply is inelastic since a 25 per cent higher wage is accompanied by only 20 per cent more workers. On the other hand, suppose that at \$4 only 500 janitors offer their services as against 700 at \$5 a day. In this case the supply is elastic in that a 25 per cent higher wage is accompanied by 40 per cent more workers offering their services.

*Joint Supply.* Some goods can be produced under technical conditions which furnish only a single product or service, but others cannot. In addition to the credit-creating facilities of a bank it may provide for the rental of safe-deposit boxes. The furnishing of these boxes is, however, not an essential part of banking. On the other hand, a farmer cannot produce wheat without also producing straw, nor corn without fodder. Along

with the cotton fiber come seeds. Butter cannot be made without a residue known as buttermilk. Hides of cattle cannot be obtained without creating carcasses; sirloin steak cannot be produced without simultaneously producing the remainder of the cow. In the process of obtaining gasoline other products are furnished. A railroad or steamship line in providing facilities for carrying traffic in one direction automatically creates facilities for carrying traffic on the return trip. Whenever the creation of a particular product or service necessarily brings into existence others, there is said to be a joint supply. Goods produced jointly have no individual supply schedules. The quantities in which such goods are offered for sale depend upon their combined prices. If one product is a main one such as cotton fiber, and the other is a by-product such as cotton seed, the price of the fiber is likely to be the one which chiefly influences the joint production. An increase in the slaughtering of cows will not occur however, merely because a higher price per pound can be received for sirloin steak. Here the combined prices of the various products produced jointly influence the extent to which any one of them will be furnished.

*Fixed Supply.* With some goods there is a fixed quantity which can be neither increased nor decreased in response to price. This is conspicuously so with land sites. Regardless of how high or low the price or rent may be, there is no expansion or contraction in the aggregate quantity. Similarly at any time the quantity of service which can be furnished by a Holland Tunnel is not affected by a high or low toll charge. With seasonally produced goods there is a tendency for the quantity available between seasons to be incapable of expansion in response to higher prices. When the quantity of a commodity or service produced cannot be expanded or contracted in response to price there is sometimes said to be a fixed stock; but the fact that the quantity in existence is fixed does not mean that the entire quantity is available either for sale or rent regardless of price.

*Reserved and Unreserved Supply.* Goods may be thrown on the market for whatever they will bring. This is especially

likely to occur at times with perishable and style goods. Even more durable goods may also be sold on this basis. Both cattle and tobacco are often sold at auction to the highest bidder whether the price is high or low. When such is the case, the supply may be designated as an unreserved supply. In contrast to this is the reserved supply, which is not offered for sale at whatever price it will bring. Branded goods may be held for sale only at a fixed price. Or goods may be held in anticipation of a higher price. It is reported that in early 1936 the United States government held about 6,000,000 bales of cotton which were available for sale but not at the market price then prevailing. The product was being held in anticipation of a higher price.

*Short-Run and Long-Run Supply.* How much the price of a commodity or service can influence the quantity which will be offered for sale depends somewhat on the period of time being considered. Even though bridge and tunnel facilities are fixed at a given time, they can usually be increased or diminished over a span of time. The importance of time shows itself very sharply and widely when a country engages in war. Despite high prices offered for vessels and ammunition, the quantity of them which can be furnished at any given time is limited by the facilities existing at that time. Sooner or later increased facilities can be provided, and with them come opportunities for larger output at the high prices.

### C. CHANGES IN SUPPLY

It has just been seen that at any given time in a market there may be a fixed quantity available for sale at any price that it will bring or there may be different quantities available depending on the selling price. As between two periods of time, however, changes may occur in quantity or in price. The same quantity which at one time may be offered in a market at a particular price may be offered at a different price at another time, or at the same price a different quantity may be offered at one time than at another.

An increase in supply as between the two periods of time is

either a larger quantity of a commodity or service for sale in a market at the same price, or the same quantity offered at a lower price. It may seem strange that there can be an increase in supply by a mere reduction in price with no change in the quantity offered. If the term supply were used in a physical sense there would necessarily be a larger quantity if the supply increased. But the term is here used in a trading sense, and the economic availability of goods depends not only on their physical existence but on the price at which they can be obtained. If taxicab rates are reduced, there may not be any change in the number of cars, nor in the physical quantity of service available to customers. The change has come through the lower price at which transportation can now be obtained compared with that required formerly.

With a decrease in supply, there may be either a smaller quantity offered than formerly in a market at the same price, or the same quantity offered at a higher price. If the same quantity is offered at a higher price there is, of course, no change in the physical quantity available to purchasers. But here again the term "supply" is used in an economic and not in a physical sense. The higher price charged curtails the economic availability of the goods. Persons with the same willingness and income as before now find they can buy less goods for the same amount of money.

When supply is viewed as a schedule, a change in supply may be somewhat confusing, and it may be helpful to consider what is meant specifically by a change in the schedule supply. It will be recalled that a schedule supply is a series of quantities which at any given time would be offered in a market at a corresponding series of prices. As between two periods of time a change is likely to occur throughout the entire schedule as suggested by Figure 45. In this chart the center line represents the original supply schedule;<sup>1</sup> the upper line represents a decreased and the lower line an increased supply. For example, on the basis of the original supply ( $S-1$ ) at the price of \$3 a

<sup>1</sup> The term "supply schedule" may be used where there is factual knowledge as to the quantities and their corresponding prices.

quantity of 3,000,000 units would have been furnished, although with an increased supply ( $S_3$ ) 4,000,000 would have been offered at the same price, while with a decreased supply ( $S_2$ ) only 2,000,000 would have been furnished at \$3. Viewed from the standpoint of changes in price rather than in quantity, it will be noted that according to the original supply schedule

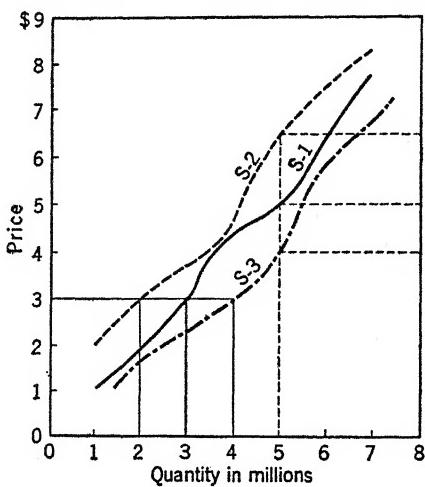


FIGURE 45. ILLUSTRATION OF CHANGES IN SUPPLY SCHEDULE

( $S_1$ ) a quantity of 5,000,000 units would have been furnished at \$5; with an increased supply ( $S_3$ ) the same quantity would have been furnished at the lower price of \$4, while with the decreased supply ( $S_2$ ) a price of \$6.50 would have been necessary to bring forth the same quantity.

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In an economic or trading sense, the terms demand and supply refer to a relation existing between quantity, price, time, and place. Often the elements of time and place are implied rather than openly stated. A complete description of the extent to which any commodity or service is either wanted or will be furnished to a market at any given time must consider alternative quantities and alternative prices. When this is done, demand and supply are represented by schedules or series

of quantities and a corresponding series of prices. The tendency for the quantity of any commodity or service which will be purchased to vary inversely with the price at any given time and place is known as the "Law of Demand." There is no equally widespread tendency for the quantity of a commodity or service which will be furnished at a given time and place to vary directly with the price. This tendency is most likely to be encountered under conditions of competition, and is referred to as the "Law of Supply" even though its applicability is not general enough to warrant its being designated as a law. As between periods of time, changes in demand or in supply may mean either changes in price as quantity remains constant or changes in quantity as price remains constant.

### QUESTIONS

1. What circumstances must exist before demand can exist in a trading sense?
2. Suppose a concern plans to manufacture and distribute a new product and engages you to make an estimate as to the demand for this product. In performing your task, what is the nature of the information you would furnish to the manufacturer?
3. Distinguish between market and schedule demand.
4. How does an elastic demand differ from an inelastic demand?
5. Prepare two imaginary demand schedules, one showing elastic and the other inelastic demand. Represent these demand schedules by diagrams.
6. Of what importance, if any, is it to a business concern or to an industry to know whether the demand for a commodity or service is elastic or inelastic?
7. Might there be any other than an elastic or inelastic relation between quantity and price?
8. State the law of demand and explain the circumstances which account for it.
9. If there were no appreciable differences in income, would the relation between quantity and price which is described by the law of demand still hold?
10. "The law of demand is not valid because experience shows that during the business cycle when prices are rising larger quantities of goods tend to be purchased at higher prices." Do you agree? Explain.
11. "There is a great increase in demand for many kinds of consumers' goods at Christmas time." Explain and point out how the various circumstances responsible for the law of demand come into operation.

12. "The mere fact that more goods are sold does not mean an increase in demand." Is this statement valid?
13. "In a trading sense, supply involves the same basic elements as demand." Explain.
14. Distinguish between competitive and monopolistic supply.
15. When the supply of any commodity or service is viewed as a schedule, what tends to be the relation between quantity and price under competitive conditions?
16. What test can be applied to determine whether a schedule supply is elastic or inelastic?
17. "Just as there is a law of demand, so there is a law of supply." Evaluate.
18. What is meant by joint supply?
19. Distinguish between reserved and unreserved supply.
20. Can there be an increase in supply if there is no change in the quantity of goods furnished? Explain.

## CHAPTER XVII

### COSTS OF PRODUCTION

#### I. GENERAL NATURE OF COSTS

##### A. MEANING OF COST

Few terms give rise to more confusion than does the term "cost." It is widely used and has no standard meaning. The same kind of costs may be designated by different names and different kinds by the same name. Despite the variations, there is an inclination for the meaning to center around either human or monetary considerations.

*Human Costs.* With all the mechanical advancement which has occurred there continues to be need for human effort in building houses, driving locomotives, constructing roads, cultivating grain, furnishing entertainment, selling goods, etc. Whether bodily energy is used to direct machinery or is directed by it there is unavoidable wear and tear on the human structure. This is not necessarily unpleasant and injurious to individuals. Under certain conditions and within limits the expenditure of effort may be physically beneficial and a source of satisfaction to them. Such is likely to be the case when persons are doing work which they enjoy, provided the duration of sustained activity does not drain energy excessively. But under other circumstances and beyond certain limits the expenditure of energy in itself is neither pleasant nor beneficial to the individual. In the process of furnishing commodities and services, unpleasant tasks must be done that are a strain on human mechanism, and may even permanently impair or destroy it. Under these conditions the human or basically real costs show themselves most clearly.

Human costs are incurred not only in the course of actually producing goods, but also in the course of supplying the capital which is used in the productive process. The saving by which

the creation of capital is possible, involves some sacrifice of consumption on the part of those who do the saving. Most individuals have vastly more desires for goods than they have money to obtain them, even if they spent their entire income; therefore, when immediate consumption is further curtailed by saving, there is an unavoidable sacrifice involved. Only through sacrifice, however, is it possible to obtain the capital by which greater production and greater income are possible in the future.

*Money Costs.* Changing circumstances have operated almost inevitably to crowd human costs into a place of secondary consideration. When individuals were producing goods by their own efforts and for their own use, only human costs had to be considered; and there were no money costs of any consequence. But when specialized production developed and goods were produced for sale, then money costs required attention. As machinery came to be substituted for labor, emphasis shifted to money costs, and instead of calculating the cost of producing capital in terms of the days and weeks of human effort required, the cost was thought of in terms of money. In some cases money costs are in no way related to human costs. Prices paid for virgin land represent no compensation for human costs, since no costs of this kind are involved in the creating of the land. The fabulous prices often paid for antiques bear no relation to the human costs incurred in their production. Similarly with rare works of art. Most of these works were originally sold by the artist for a pittance. Even when money costs are related to human costs, the relation is not necessarily a close one. Overtime work which causes inconvenience and relatively heavy fatigue may or may not be compensated at a higher rate of pay than prevails for normal working time; hazardous work at times commands a premium, but not always. The need for compulsory workmen's compensation insurance was prompted by the grossly inadequate reflection in money costs of the human costs arising from industrial accidents and occupational diseases. Throughout the remainder of this chapter attention will center

on money costs, not because they are more important fundamentally than human costs, but because money is the commonly accepted means of calculating costs.

#### B. CONDITIONS AFFECTING COSTS

While the calculation of costs in terms of money has certain advantages, an accurate calculation is not the simple task that many people are led to believe, because of the different conditions and circumstances which surround the calculations. Indeed, some persons argue with considerable force that many of these conditions and circumstances make the determination of cost impossible. In any event, costs are influenced by the purpose for which they are calculated, the arbitrary decisions made in calculating them, the time involved, and the volume of business in connection with which the costs are incurred.

*Purpose.* It is not a new practice for business enterprises to have more than one set of books. For many years a favorite means of deceiving tax-gatherers was for merchants to keep two sets of books, one for the purpose of showing losses by which taxes might be evaded and the other for the purpose of showing the true condition of the business. In more recent times similar devices have been used to defraud the creditors and even the stockholders of a business. Along with deceptive purposes there are legitimate ones which require the calculation of costs in different ways. Records are intended to throw light on business problems. Since business is confronted with various problems there is need to analyze costs from such different angles as particular problems require. The purpose for which most costs are calculated is to determine whether the conduct of the business has resulted in a profit or a loss to its owners. But this is not the only problem. Among others are: Shall a business be started? If so, how large shall it be? In the case of a going concern, will a change in the methods of production be advantageous? Shall the enterprise be enlarged? Shall the plant be shut down temporarily? Would discontinuing the business be advisable?

Not only must costs be calculated for different problems, but

the items which may be properly considered as costs also depend on the purpose for which the costs are being calculated. Suppose a concern borrows \$50,000 with which to purchase some raw materials required in the process of production. For some purposes costs are incurred when the funds are borrowed, for other purposes when the raw materials are acquired, and for still other purposes when the material is actually consumed or used in the course of creating goods.

*Time.* The element of time comes into the picture in two ways. In the first place, the costs of enterprises are calculated with reference to some specific period of time. Even if a concern does not keep any records for its own use, it may be required to make estimates of cost on a yearly basis for the purpose of taxation. While most concerns perform the operation known as closing their books only once a year, many make much more frequent calculations at least of certain costs for budgetary and other purposes. In the second place, the element of time often exerts an influence on cost in one way or another, although the particular way in which this occurs depends somewhat on the purpose for which the costs are calculated. Mention has already been made in an earlier chapter of the influence of seasonal operations on the costs of production. Much of the capital employed throughout industries in general, is durable in nature and its productive power is given up more or less gradually in the course of its utilization. How much of its aggregate usefulness is chargeable to production at any given time is influenced in part by the span of time over which the equipment is expected to continue in use. Factory buildings, as well as some other forms of equipment, are expected to last a number of years while still others may last only a day or less. Then, too, in the course of business relations contracts are made and obligations incurred, such as interest charges, which affect certain kinds of costs during the period of the contract. Consideration of future needs may prompt the creation of present facilities for production in excess of those which can immediately be used profitably. Whether or not the financial burdens which such investments impose on concerns constitute

costs again depends on the purpose for which costs are calculated.

*Volume of Business.* Either directly or indirectly costs are incurred presumably for the purpose of producing goods. This presumption is not always justified as when costs are incurred in curtailing or preventing production. At times concerns are forced by poor business conditions to shut down temporarily, but even then some types of cost continue. The fact that a building is idle does not mean that its physical deterioration ceases until it is used again nor do the forces creating obsolescence halt when existing equipment is unemployed. In most cases, however, costs have little or no meaning except in relation to business either at hand or anticipated.

*Arbitrary Decisions.* Regardless of how elaborate or meager the provisions for calculating costs may be, the significance of the final result depends on the validity of the arbitrary decisions made in the course of the calculations. Since the wear and tear of equipment cannot be determined with accuracy, assumptions, based upon experience which furnishes a guide, are made as to its extent. Usually not even a guide is available in the case of obsolescence even though this factor may be more important than deterioration. If by chance scientists should discover how to explode the atom the present methods of power generation would probably be revolutionized and existing equipment, even though in excellent physical condition, would be made obsolete rather quickly. Any assumptions made with respect to obsolescence are little more than guesses, the accuracy of which only time can tell. In some instances items are included in cost which in no way relate to the production of service in which a concern specializes. Suppose a corporation engaged in manufacturing invests in real estate with a view to concealing present profits and of obtaining speculative gains from selling or renting property in the future. Taxes and other obligations in connection with this investment are paid by the corporation and are likely to be charged as costs of operating the business, although they are not costs of producing goods in which the enterprise specializes. On the other hand,

items which are properly costs of production may not be included as such. Individuals engaged in business for themselves often consider costs as only the money payments they make to other persons. Among the items most frequently omitted are returns on the proprietor's investment and compensation for services rendered by him in connection with the business. For certain purposes at least these items constitute costs, and their arbitrary omission makes cost of production appear lower than is actually the case.

## II. TYPES OF COSTS

Among the bewildering assortment of costs there are a few types which are particularly important to an understanding of the price tendencies and practices which will be considered in several of the immediately following chapters. These are the types of cost which will be examined here, and they will be treated mostly from the standpoint of individual enterprises, rather than of entire industries. It is true that the forces which determine price tendencies as encountered in the market are beyond the control of individual concerns. But it is also true that with productive activity conducted as it is, for the most part, in this country, costs are incurred by individual enterprises and not by entire industries.

### A. AGGREGATE AND PER UNIT COSTS

Some claim that the production of goods in large quantities is more costly than in small quantities, and others insist that small quantities are more costly than large amounts. The validity of these conflicting statements as they apply to production at any given time depends in part on whether costs are being considered for the aggregate output or on a per unit basis.

*Aggregate Costs.* In the aggregate, costs tend to vary directly with the volume of production. Suppose a manufacturing concern has physical equipment, including plant and machinery, which permits most efficient operation when 40,000 units of goods are being produced a month. This will be

assumed as normal capacity. If production falls below 10,000 units, the shutting down of the plant is more advantageous than its continued operation. At the other extreme the plant is incapable of turning out more than 44,000 units a month. As operations expand from the lower limit, which is 25 per cent of normal capacity, to the upper limit, which is 110 per cent of that capacity, aggregate costs increase from \$48,000 to \$118,000, as illustrated by the upper diagram of Figure 46. Conversely, aggregate costs tend to decline as operations contract within the same limits. The reason for the costs varying directly with output will be explained presently. At the moment it is sufficient to notice the tendency itself.

The same tendency is encountered with enterprises of any size. If the above concern had been organized to produce a larger or a smaller quantity at normal capacity the aggregate costs would probably have been different for corresponding degrees of operation. But as the operations moved from a lower to a higher level the aggregate costs would have tended to increase, and as operations contracted these costs would have declined.

*Unit Costs.* The tendency of unit costs depends on the degree to which existing facilities for production are being utilized. When the aggregate cost is distributed evenly over whatever quantity is actually produced, the average or per unit cost shows a distinct tendency to decline as operations expand toward the point of normal capacity. This is shown in the lower diagram of Figure 46. From a per unit cost of \$4.80 when

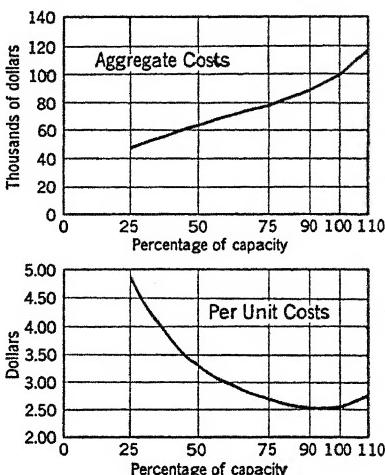


FIGURE 46. AGGREGATE AND PER UNIT COSTS OF OUTPUT REPRESENTING DIFFERENT PERCENTAGES OF CAPACITY

the plant is operating at 25 per cent of capacity the cost declines to \$2.50 with operations at a 90 per cent level. As production approaches the normal capacity there is often a tendency for the per unit cost of the total output to remain the same. In the illustration the cost remains the same at normal capacity as at 90 per cent of it, being \$2.50 in both cases. But as productive facilities are pushed beyond their most efficient limit, the unit cost rises. From \$2.50 it increases to \$2.68 when the plant is operating at 10 per cent above normal capacity.

Thus while aggregate cost tends to be higher for a larger than for a smaller quantity of production, the cost per unit may be higher, lower, or the same. Within the limit of normal capacity cost per unit shows a distinct tendency to be lower for a larger than for a smaller quantity of output. Beyond normal capacity there is a persistent tendency for per unit cost, like aggregate cost, to be greater for a larger than for a smaller quantity. Only around the point of normal capacity do per unit costs tend to remain unchanged, even though aggregate costs may be increasing or decreasing.

#### B. FIXED AND VARIABLE COSTS

*Their Nature.* With the productive capacity which exists at any time, the total costs for individual items fall into two broad groups with respect to the influence exerted on them by changes in the degree to which the capacity is utilized. Some are not affected by changes in the aggregate volume of production. Since they are insensitive to changes in output they may be designated as fixed costs. In contrast to these are the variable costs or those which change in total amount when output changes. To fall within the group of variable costs, the amount for any individual item may or may not change in the same direction as output. The only requirement for inclusion is that the total cost for an item does not remain the same when output changes. Usually the variable items move in the same direction as production, increasing when it expands and decreasing when it contracts.

The previously noted tendency for aggregate costs to vary directly with changes in output is accounted for by the fact that some costs are fixed and that most of the variable costs move in the same direction as the volume of business. This is illustrated by Figure 47, in which, at any given time, certain

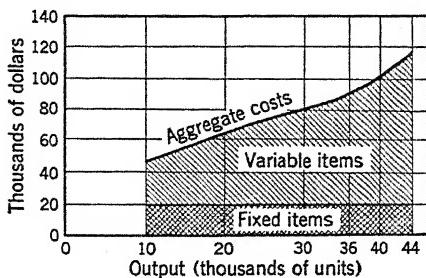


FIGURE 47. SEPARATION OF AGGREGATE COSTS INTO FIXED AND VARIABLE ITEMS

monthly costs remain at \$20,000 whether output is large or small. These are shown at the bottom of the diagram. Other costs, however, increase from \$28,000 when the plant is operating at 25 per cent of normal capacity, to \$98,000, when operations exceed normal capacity by 10 per cent. The total cost for the aggregate production at any time is a combination of both fixed and variable items and these increase from \$48,000 to \$118,000.

While every enterprise has some fixed and some variable costs, the particular items which fall into each group depend upon surrounding circumstances. Interest on bonds is ordinarily considered a fixed cost, but the bonds may be "income bonds" in which case no interest must be paid unless it is earned. Rentals in some cases are fixed in amount, as when a warehouse is rented at \$100 a month. But some rentals may be variable in amount depending upon the volume of business done. Thus the charge might be 3 per cent on gross sales. Wages are usually considered as variable costs, but they may be fixed, as when employees are engaged on the basis of stipulated yearly salaries payable in twelve monthly installments.

Depreciation of farm machinery may be partly fixed and partly variable. Even when not in use there is some deterioration and this constitutes a fixed cost, whereas when the equipment is being employed the deterioration tends to vary directly with the amount of use and this portion is a variable cost.

Moreover, there is no uniform proportion between fixed and variable costs. The nature of the business and the period of time under consideration influence the degree to which costs can or cannot change in response to expansion or contraction in the volume of production. In those enterprises requiring large amounts of capital in such forms as buildings, machinery, and equipment, the fixed costs are likely to be a larger part of total cost than in those enterprises where most of the work is done by hand. Also the period of time being considered affects the status of costs. The shorter the period the more costs are fixed and the longer the period of time the fewer. During short periods of slack business many concerns find it inexpedient to reduce the wage rates or lay off experienced workers, although if business were inactive for an extended period of time some reductions in the cost of such labor would be made through lower rates, shorter working time, and layoffs. During short periods bonded indebtedness gives rise to fixed costs, but over longer periods the indebtedness may be increased or decreased as a result of changes in the volume of business. Even if the indebtedness remains the same an appreciable decline in production may force bondholders to accept lower interest rates in order to prevent bankruptcy of the enterprise.

Among those costs which vary directly with the volume of business, some are more sensitive to changes in output than are others. Here three rates of change can be distinguished: proportionate, more than proportionate, and less than proportionate. When an item changes at the same rate that production changes, there is a proportionate change in cost. Thus a 10 per cent increase in output might require a 10 per cent increase in the cost of material. In other cases an item of cost changes more rapidly than output. If a 25 per cent increase in production requires overtime work there might be a

40 per cent increase in labor cost. Here the change in cost would be more than proportionate to the change in output. Or, a 20 per cent increase in production may call forth only a 5 per cent increase in cost of supervision. In this instance, the change in cost is less than proportionate to the change in the volume of business.

An item of cost, however, does not always change at the same rate. In the first place, the rate of change may depend upon whether output is increasing or decreasing. For example, at any given time the consumption of electric power may place a concern in a class with a rate of 2 cents a kilowatt hour, but an increase in production may require sufficient additional power to qualify the concern for a lower rate on a higher consumption. This might mean an increase of only 1 per cent in the total cost of current for an 8 per cent increase in the volume of production. On the other hand, if production had declined 10 per cent the rate for the reduced consumption of current might have remained unchanged so that the total cost would have declined 10 per cent. Then too, the rate at which costs change may depend upon whether the changes in production are large or small. A 10 per cent increase in business may not permit a concern to order materials in sufficiently large volume to obtain quantity discounts. But if business had increased 25 per cent, it might have been possible to obtain these discounts, with the result that material costs would have increased only 20 per cent.

*Influence of Total Costs on Unit Costs.* The fact that the total costs for some items are fixed in relation to aggregate production does not mean that per unit costs remain unchanged. Nor does the fact that some costs are variable on the basis of aggregate output mean that they must give rise to changing per unit costs. In considering the influence of fixed and variable costs when they are distributed over the aggregate production, the usual procedure will be followed of emphasizing the course which unit costs follow with expanding output.

(a) *Decreasing Unit Costs.* When an enterprise experiences increased utilization of its existing facilities for production, the items of fixed costs necessarily decline on a per unit basis. The

increased output provides more units over which such fixed costs as those for interest, rental, executive salaries, and obsolescence are spread. If interest charges require \$2000 a month whether 10,000 or 40,000 units are being produced, the obligations amount to 20 cents per unit for the smaller quantity as against only 5 cents for the larger amount. The higher the proportion of fixed costs in relation to variable ones, the greater are the reductions in per unit costs with expanding production. The heavier the burden of fixed costs, the greater is the pressure for price-cutting among competitive enterprises when their volume of business is below the level of normal capacity.

Variable costs may also give rise to decreasing costs per unit as output expands. This occurs whenever the speed at which an item of cost increases is slower than the rate at which production increases. The less than proportionate increase in aggregate cost for the item gives rise to a declining cost per unit. For instance, the cost of materials might be \$14,000 for 10,000 units of goods as against \$24,500 for 20,000 units. Here a 100 per cent increase in output requires only 75 per cent increase in aggregate cost, with the result that per unit costs decline from \$1.40 to \$1.23. Labor costs at times also show the same tendency, although for somewhat different reasons. The lower per unit costs of materials are likely to arise mainly through the economies of buying in larger quantities. In some instances there are also possibilities for more efficient use of materials with a larger volume of production. Labor can seldom be hired at lower rates merely because it is employed in larger quantities. Lower per unit costs arise almost entirely from the more efficient use of a larger than of a smaller working force. When a concern is operating with only a skeleton force, labor cannot be utilized as economically as when a larger volume of business warrants a full force with each worker specializing in his regular work.

(b) *Increasing Unit Costs.* When items of variable cost increase faster than output expands, increasing per unit costs result. This is most likely to occur with materials and labor when a plant is pushed beyond its normal capacity. In the

case of materials, prices may even decrease, but under the pressure of faster work there can be more waste and spoilage so that material cost rises per unit of finished product. Suppose materials cost \$40,000 when the plant is operating at capacity and turning out 40,000 units, while materials cost \$52,000 for 44,000 units. Here production increased 10 per cent as against 30 per cent for material cost, so that the per unit cost increases from \$1 to \$1.30. In the case of labor two situations may combine to create increasing per unit costs. When operations are pushed beyond normal capacity, efficiency tends to decline, especially if there is considerable overtime work. During the additional hours fatigue increases rapidly, and the rates of pay for overtime may be higher than is paid for normal time work. Overtime often requires time and a half or double time pay, which means that rate increases of from 50 per cent to 100 per cent are not unusual. Consequently if workers continued to be just as efficient, the labor costs per unit would increase for the overtime work. While the higher rate applies only to overtime work, this rate combined with lowered efficiency might result in an appreciable increase in labor cost. Suppose a concern operating at normal capacity had a payroll of \$24,000 for 40,000 units of output, whereas with a 10 per cent increase in output (44,000 units) the wage bill increased to \$32,000 or  $33\frac{1}{3}$  per cent. In this instance labor costs per unit increase from 60 cents to 73 cents.

(c) *Constant Unit Costs.* When the aggregate cost for any item increases at the same rate as output expands, the per unit costs remain constant. Within limits this is likely to occur in the case of materials and labor, and may also occur with some rental charges. Coal may cost less in carload lots than in smaller quantities, but there may be no difference between one and two carloads. Within these limits per unit costs for fuel remain the same. Labor costs are more likely to remain constant if workers are paid entirely on a piece basis than if paid on a time basis. A somewhat similar situation arises in the case of machinery which is rented rather than purchased. Rental charges may be based on the extent to which it is used,

as in the case with shoe-making machinery. In this event the per unit cost for machinery remains unchanged. When store rentals are based on a fixed percentage of sales there is constant cost per dollar volume of business.

Just as per unit costs for an item may follow any one of three courses when output increases, so they may follow any one of these courses when output is curtailed. Decreasing costs per unit arise with all items whose aggregate cost falls more rapidly than output. This occurs in the case of labor and materials when a plant which has been operating above normal capacity reduces its operation to the normal level. Increasing unit costs develop with all items whose aggregate cost either is fixed or decreases less rapidly than production. A concern which employs one electrician cannot employ four fifths of one when business falls off 20 per cent. Rentals fixed on a monthly basis always give rise to increasing unit costs with a reduced volume of business. Constant costs occur whenever the aggregate amount of an item decreases at the same rate that production declines. This tends to be the case in the consumption of electric energy for operating machinery, provided the consumption does not decline far enough to encounter a higher rate per kilowatt hour.

It appears, therefore, that items of cost which are fixed in aggregate amount become variable on a per unit basis and move inversely with the volume of business, while costs which are variable in aggregate amount may or may not give rise to changes in per unit costs depending on how the speed at which they are changing compares with the speed at which production is changing. While increasing, decreasing, and constant unit costs are encountered with both expanding and contracting production, these cost tendencies generally refer to expanding production unless declining output is indicated.

*Total Unit Costs.* Not only may the costs per unit for individual items decrease, increase, or remain constant, but the total costs per unit may also follow any one of these three courses, as has already been pointed out in connection with Figure 46. The individual items move in different directions

and at different rates of speed as output changes. Consequently the total costs per unit represent a combination or balancing of these individual items. If the total unit cost declines, it means that the influence of the items which are declining offsets the influence of those which are remaining constant or are increasing; if total unit cost remains constant, the influence of the increasing items just offsets the influence of the decreasing items; if total unit cost increases, the influence of the individual items moving in this direction more than offsets the influence of the items which are constant or decreasing.

#### C. DIFFERENTIAL COSTS

In addition to the fact that the volume of production influences costs, costs in turn influence the volume in which any commodity or service tends to be produced. Over a period of time the total costs exert considerable influence in determining whether or not expansion of facilities will be undertaken. If selling prices persistently fail to cover total costs, there is no incentive for expansion; but if selling prices yield a margin over these costs, additional productive facilities are likely to be forthcoming. How intensively existing facilities will be utilized at any given time is also determined by the relation of costs to selling prices, but here differential costs rather than total costs exert dominating influence.

*Their Nature.* Differential costs represent the difference between following one course of action and following another with respect to the utilization of existing facilities for production. Ordinarily these costs represent the difference between the cost of producing a certain quantity and the cost of producing a somewhat larger quantity. At times, and especially in periods of business depression, some concerns are operating at such low levels that they are faced with the problem of whether continued operation would be more advantageous than temporary shut-down. Even if operations are suspended, some costs usually continue, such as obsolescence, depreciation, protection of property, and interest charges. These are sometimes known as shut-down costs, and from some standpoints

cannot be considered as costs, since they do not give rise to any production. They are incurred, however, in anticipation of future production and influence the utilization of existing facilities.

TABLE 9. OUTPUT AND COSTS

Per cent of Capacity	Total		Differential	
	Output	Costs	Output	Costs
0	Shut down	\$15,000	....	....
25	10,000	48,000	10,000	\$33,000
50	20,000	64,600	10,000	16,600
75	30,000	79,500	10,000	14,900
90	36,000	90,000	6,000	10,500
100	40,000	100,000	4,000	10,000
110	44,000	118,000	4,000	18,000

The nature of differential costs is illustrated in Table 9. Aggregate production and costs are shown on the right. It is here assumed that shut-down costs amount to \$15,000. When the concern is producing 10,000 units the aggregate cost is \$48,000, but the differential cost of this quantity is only \$33,000. This is the additional amount incurred over that which would have been required had the plant shut down temporarily. If production were increased from 10,000 to 20,000 units the aggregate cost for the larger quantity would have been \$64,600, although the differential cost for the additional 10,000 units is only \$16,600. With production of 30,000 units the aggregate cost is \$79,500, or \$14,900 more than required for 20,000 units. The \$14,900 is the differential cost of the additional 10,000 units.

*Relation to Unit Costs.* How widely the total and the differential costs may differ on a per unit basis is illustrated in Figure 48. When the concern is operating at 25 per cent of capacity and turning out 10,000 units, the total cost is \$48,000 or \$4.80 per unit. Since \$15,000 would be required if operations were temporarily suspended, the differential cost of the 10,000 units is only \$33,000 or \$3.30 per unit. If production is increased from 10,000 to 20,000 units, the total cost increases from \$48,000 to \$64,600 and per unit costs fall from \$4.80 to

\$3.23. But the differential cost for the additional 10,000 units is only \$16,600 or \$1.66 per unit as compared with \$3.30 for the increase in entire quantity. At only one point do the total and differential per unit costs correspond. This is when the pro-

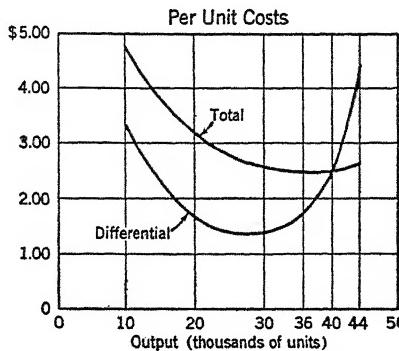


FIGURE 48. TOTAL AND DIFFERENTIAL COSTS PER UNIT

ductive facilities are employed at their normal capacity. When operations fall below this point the differential costs are below the total costs, and when operations exceed normal capacity the differential costs are higher than the total costs per unit.

Not only is there a divergence between total and differential costs per unit in most cases, but the nature of the divergence is such that total costs are misleading as to the most advantageous course for an enterprise to follow in expanding or contracting output within the limits of its existing facilities. On the one hand, it may be advantageous to sell at prices below total unit costs; on the other, it may be disadvantageous to sell at prices above them.

(a) *Selling Below Total Unit Costs.* Suppose a concern has been operating at normal capacity with a total cost of \$2.50 per unit and a market price of \$2.70. The market price then declines to \$2.40, and even at this figure the concern can sell only 75 per cent of normal capacity. But when output is curtailed to 75 per cent, total unit cost increases to \$2.65, thus resulting in a loss of 25 cents per unit. Any further curtailment of pro-

duction would increase total per unit costs still further. Consequently, the concern is faced with the necessity of deciding whether it will be more advisable to accept the loss or shut down the plant until prices rise. Which course will be most advantageous for the enterprise to follow depends upon a comparison of operating loss and shut-down costs. If the obsolescence and other costs which continue whether the plant operates or not amount to \$15,000, it is this figure which must be compared with the losses which will be sustained if the plant operates at 75 per cent of capacity. At this level of capacity the total costs are \$79,500 and the income from the sale of 30,000 units of product at \$2.40 is \$72,500, or \$7500 short of total cost. But since \$15,000 expense would be incurred if the plant shut down, there is an advantage in accepting the smaller loss of \$7500 rather than the larger shut-down loss of \$15,000. When market conditions make a loss inevitable, there is always an advantage in accepting a smaller rather than a larger loss.

When the concern is operating at 75 per cent of capacity and selling its output at \$2.40 even though total per unit cost is \$2.65, suppose there is an opportunity to get an additional order for 6000 units at a price of \$2. Acceptance of this order would enable the plant to operate at 90 per cent of capacity for at least several months if regular business remained at its present level, and total unit costs would decline to \$2.50. At first glance it might seem unwise to accept the order, even though the lower price would not interfere with existing business at a higher price. It might be argued that at the present time goods are being sold at only 25 cents below total cost, while the price for the additional order would be 50 cents below the total unit cost of the larger output. But here it is necessary to consider the differential costs. When operating at 90 per cent of capacity the total cost is \$90,000, as against \$79,500 when operating at 75 per cent of capacity, or a difference of \$10,500. Spreading this amount over 6000 additional units, the differential cost per unit is \$1.75. Consequently the offered price of \$2 is 25 cents a unit above differential costs and

the aggregate loss will be reduced by accepting the special order. Without this order 30,000 units would be sold at \$2.40. The resulting income is \$72,000 as against a total cost of \$79,500, or a loss of \$7500. But with the additional order of 6000 at \$2 the income is increased by \$12,000 and becomes \$91,500. Deducting total costs of \$90,000, the loss now amounts to only \$1500.

Assume now that the order just mentioned had been accepted and the customer renewed the offer at the same price, namely \$2. In the meantime the market price had risen so that the concern was able to sell goods at \$2.70 but was unable to get any appreciable increase in orders, so that operations continued around the 75 per cent level with total costs of \$2.65 per unit. A renewal of the special order could not serve to reduce losses since the concern was now selling at a price above its total costs. Acceptance of the order, however, would serve to increase profits. By selling 30,000 units in the market at \$2.70, the total income would be \$81,000, as against total costs of \$79,500, thus giving a profit of \$1500. Acceptance of the order for 6000 units at \$2 would raise the total income to \$93,000, although total cost would be increased to only \$90,000, leaving a profit of \$3000 instead of \$1500. Here profits have been doubled by accepting an order at a price considerably below the total per unit cost of the entire output.

It may be argued that the above reasoning is false in that it makes unprofitable sales seem to be profitable merely because the additional business does not bear its pro-rata share of the fixed costs. It is true that the extra business does not bear a proportionate part of these costs, but since these costs would have continued whether or not the business were accepted, they are not directly attributable to the additional business. If the enterprise had been able to sell its entire output at the market price, there would have been no advantage in accepting business at a lower figure. But with unused capacity, the costs which remain unchanged become unimportant in deciding the price at which it will be advantageous to accept such additional business as will take up some, if not all, of the slack

in capacity operations. Consequently if the selling price for additional output more than covers the differential costs involved, acceptance of the business is profitable only in the sense of being advantageous to the enterprise. It is the influence of these differential costs which often accounts for the practice called "dumping."

(b) *Selling Above Total Unit Costs.* While it may be advantageous to produce goods at prices below total unit costs, it may be disadvantageous to produce goods at prices above these costs. Suppose the concern is operating at capacity with a total cost of \$2.50 and a selling price of \$2.70, and that an additional order of 4000 units is offered which would require the plant to operate at 10 per cent above its normal capacity. It is known that with such operation total unit cost will rise to \$2.56, but this is still less than the selling price of \$2.70. On the surface it would appear advantageous to accept the additional business, but an examination of differential cost discloses that the additional production would be unprofitable. When the plant is operating at 10 per cent above normal capacity, the cost for the aggregate output is \$118,000 as compared with \$100,000 when operating at capacity. Thus the differential cost for the 4000 units is \$18,000 or \$4.50 per unit. If the order were accepted at the prevailing market price of \$2.70, a loss of \$1.80 per unit would result. Without this order operations at normal capacity cost \$100,000 with income of \$108,000 from the sale of 40,000 units at \$2.70 each, thus furnishing a profit of \$8000. With the additional order total costs are increased to \$118,000 and income is increased to \$118,800 with the sale of 44,000 units at the same price of \$2.70 each. Here the profit is only \$800. The acceptance of the special order even at a price above the total average cost results in profits being 90 per cent less than without the order.

The reason for this extreme increase in differential cost is that the additional order requires the plant to be pushed beyond the point of its maximum efficiency. This occurs at normal capacity with total and differential costs per unit corresponding. When the differential cost of \$18,000 for the extra 4000 units is

distributed evenly over the entire production of 44,000 units, the increase in cost is only a few cents per unit. But the entire output is not responsible for the additional cost. If this is assessed against the 4000 units which were directly responsible for it, the per unit cost of these is \$4.50 even though the average is only \$2.50 for the entire 44,000 units.

#### D. JOINT COSTS

It is seldom possible to determine the actual cost of producing any particular unit of a commodity or service. Most goods are produced in batches and lots or their equivalent, so that only the average or per unit cost of a given quantity or of an additional quantity can be determined. Even this is impossible with some commodities and services. In the preceding chapter mention was made of jointly produced goods, such as cotton fiber and cotton seed. Whenever two or more commodities or services must be produced simultaneously, or when even increased facilities for producing one of them automatically create increased facilities for others, there is joint production. Sometimes different goods must be produced in proportions which are either absolutely or substantially fixed. Thus there is a hide for every carcass of an animal. In other instances the proportions can be varied. Among the products extracted from petroleum are kerosene and gasoline, although the proportions in which each can be obtained is not fixed. A given amount of petroleum may be made to yield much gasoline and little kerosene or much kerosene and little gasoline. The proportions in which wool and mutton are produced also vary. In any event when goods are produced on a joint basis there is no possible way in which the cost for the separate products can be determined. The scrambled egg cannot be unscrambled.

There are, however, various arbitrary bases on which these costs can be calculated. No attempt will be made to consider all of them. One of these is to allot the total costs between the jointly produced goods in proportion to their market value. On this basis, if gasoline and kerosene each sold at 15 cents a gallon the total joint cost would be split equally between the

two products, but if gasoline sold at 20 cents and kerosene at 10 cents, the former would be charged with two thirds of the joint cost and the latter with one third. Another method employed, especially where there is a main product and a by-product, is that of deducting the value of the by-product from the total joint costs and assuming the balance to be the cost of producing the main product. Where the by-products have comparatively little value in relation to the main product, this method furnishes a substantially accurate indication of the cost incurred for the main product, since the cost of producing the main product would be approximately the same if the by-product were wasted. This method of calculating cost is no less arbitrary than the preceding one, nor than another encountered in the chemical industry. In the joint production of caustic soda and chlorine from common salt some concerns allocate the joint costs on the basis of an arbitrarily set ratio. Among concerns using the same chemical process the joint costs have been split between soda and chlorine on the basis of such different standard ratios as 50-50, 40-60, 60-40, 56-44. With some goods more elaborate and highly technical bases are used for allocating joint costs. But whatever method may be followed, the results are purely arbitrary.

#### E. REPRESENTATIVE COSTS

Thus far consideration has been given only to the costs of individual enterprises and not of entire industries. For some purposes it is necessary or desirable to consider an industry as a whole, and when this is done reference is often made to representative costs. In some instances such costs serve merely to describe tendencies and in others they are used for purposes of regulation.

*For Purposes of Description.* The idea of representative costs is not new and serves as a convenient means for describing the long-run tendencies of production costs throughout an industry as it becomes equipped to furnish larger quantities of goods.<sup>1</sup>

<sup>1</sup> The concept of representative costs used here differs from that of Alfred Marshall and most of his followers in that their concept relates to static rather than dynamic conditions and does not embody the influence of changes in the technique of production to the degree that these changes are included here.

During the short run the level of cost reflects the prevailing method of production and the scale on which operations are being conducted. Over a longer span of time changes occur in the technique and scale of operations. The period designated as a long run is whatever time may be required for these changes to take place. They do not occur evenly among all enterprises in an industry, but exert an influence on the general level of unit cost for the industry as a whole.

During spans of time sufficiently long to permit expansion of productive facilities the representative costs of an industry may tend to increase, decrease, or remain constant. In some instances these different types of cost are associated with particular kinds of productive activity. Increasing costs are associated with the extractive industries, decreasing costs with manufacturing, and constant costs with handcraft work. No one type of cost, however, is peculiar to a particular industry or group of industries. Rather it would seem that when an industry is expanding under certain conditions it will encounter one tendency, while if expansion occurs under other conditions a different long-run cost tendency will be encountered.

(a) *Increasing Cost Tendency.* There are circumstances under which long-run expansion in the production of an industry can occur only on the basis of an increasing level of cost throughout an industry. This is most noticeable in the extractive industries which rely heavily on scarce, non-reproducible, and destructible resources. When the expansion of production in an industry calls for larger amounts of those scarce resources which, like land, are fixed in aggregate amount, increasing cost is encountered in obtaining them unless there are simultaneously reduced requirements for them in other industries. Then, too, when an industry expands its operations to such an extent that the various factors required for production can no longer be coordinated in their most efficient combination, there is a tendency to diminishing returns and increasing costs. As additional amounts of labor and capital are combined with a given amount of land, a point is reached, as noted in an earlier chapter, beyond which additional output

becomes increasingly more difficult and expensive to obtain. Under some circumstances, however, either labor or capital might be the limiting factor. Finally, the technique of production plays a part. When increasing scarcity of those things required for production develops, the pressure may be relieved by technical improvements. But if the technique of production remains the same, or does not improve rapidly enough to offset the influence of increased scarcity of those things required, the level of cost will increase. Mention has already been made of the fact that despite technical improvements in the mining of anthracite these have been inadequate to offset the influence of diminishing returns, with the result that the level of costs for the industry tends to increase.

(b) *Decreasing Cost Tendency.* The circumstances under which an industry expands with decreasing costs are the reverse of those which give rise to increasing costs. When industries depend heavily on free, reproducible or non-destructible resources, an increasing requirement for these resources does not create the pressure which arises with heavy demands for scarce, non-reproducible, and destructible resources. Then, too, under some circumstances larger-scale operation, as already noted, gives rise to economies in production which enable greater quantities of goods to be furnished at lower unit costs. It is generally true that costs in a new industry are higher than when the experimental stages have been passed and the industry gets "into its stride." The automobile industry has furnished a conspicuous illustration of this. Finally, even when there develops scarcity of the factors required for production, and when more efficient combinations of the required factors cannot be obtained under existing methods of production, there are possibilities for changing the technical process by which goods are furnished. If the possibilities and opportunities for technical changes increase more rapidly than the resistance to greater output, the representative costs in an industry decline.

(c) *Constant Cost Tendency.* The most infrequently encountered tendency for an industry as a whole is long-run expansion

with representative costs remaining constant. Under some circumstances an industry can obtain at the same unit costs such quantities of labor, capital, and land as it needs for expanded production. This would occur if at the time an industry were expanding there were a decline or contraction in some other industries which releases land, labor, and capital to approximately the same extent that the expanding industry requires them. It is not necessary to employ the same land, labor, and capital that the contracting industries release, but merely that the aggregate amounts be substantially the same. There are also circumstances under which an industry can expand with no increase or decrease in the efficiency with which the various productive factors are combined. Larger-scale operations do not always provide opportunities for more advantageous division of labor and other economies than do smaller-scale operations. This is especially likely in handcraft industries where large investments in land and capital are not required for efficient production of goods. Also the absence of any improvement in the technique of production may give rise to constant costs. Finally, the general level costs for an industry may remain unchanged with expanding production when there is a counterbalancing between increasing costs in some aspects of operation and decreasing costs in others. Thus unit costs for labor might remain the same while unit costs for land increased and costs for capital decreased. If the lower unit cost for capital per unit of output just offset the higher cost for land, the net result would be no change in the level of total unit costs for the industry as a whole.

*For Purposes of Regulation.* A more recent use of the representative cost idea has developed for purposes of regulation. In some instances individual concerns calculate a type of representative cost which is sometimes called the standard cost. This cost is used as a basis for judging the efficiency of actual performance. But the idea is also used in a broader way. In the regulation of public utility rates the use of a standard or representative cost has been urged as a basis for rate-making. Under the short-lived National Industrial

Recovery Act several efforts were made to prevent price cutting by forbidding enterprises in an industry to sell goods below the representative cost of production for the industry as a whole. No attempt was made to apply representative costs as conceived and originally used by Marshall.

When the idea of representative costs for an industry is used for purposes of regulating prices therein, certain difficulties develop which either do not exist or are not significant when the idea is used merely to describe the long-run tendency of total unit costs in an expanding industry. In the first place, the description of a tendency in terms of representative costs does not require the actual calculation of costs for an industry. But for regulatory purposes the actual costs become essential. In the second place, determining actual costs and output for an industry is by no means a simple task, as experience under the National Industrial Recovery Act indicated.

Further difficulties exist even when the actual costs and volume of business for the separate enterprises comprising the industry are available on a comparable basis. There are different points of view from which costs may be representative. At least three types of averages serve to show central tendencies of cost in an industry. Their technical names are mean, mode, and median. Under some circumstances they yield the same results, but under others the results are widely different. The mean is the one most people have in mind when they refer to an average; it is obtained by dividing the total production into the total cost. Thus if the firms in an industry produced 2,000,000 units with a total cost of \$5,841,000 the cost is \$2.92 per unit. This cost is representative only in the sense that it shows what the cost of each unit would be if the total actual costs were distributed evenly over the entire output. For many purposes such an average is unsatisfactory. In a competitive industry changes in output are not influenced by the prospects of recovering those unit costs which would prevail if the total costs of all concerns in the industry were distributed evenly over the industry's entire output. However, the idea of a representative cost may also refer to the cost which predomi-

nates in the industry. Suppose the various amounts produced at different costs were as follows:

Total Unit Cost	Quantity	Aggregate Cost
\$2.50-\$2.59	100,000	\$255,000
2.60- 2.69	500,000	1,325,000
2.70- 2.79	400,000	1,100,000
2.80- 2.89	300,000	855,000
2.90- 2.99	250,000	737,000
3.00- 3.29	220,000	693,000
3.30- 3.69	140,000	525,000
3.70- 4.09	90,000	351,000
	<u>2,000,000</u>	<u>\$5,841,000</u>

The predominating costs range between \$2.60 and \$2.69. At these costs 500,000 units were produced and no equally large amount was produced at any other costs. Such an average is known as a mode, and is representative in the sense that it indicates the cost which is most prominent. Only 25 per cent of the total output, however, was produced at these costs. Another view of representative costs is that which divides the total volume of business in half. In the above illustration half of the entire quantity was produced at costs of less than \$2.80 and half at costs of \$2.80 or more. This halfway point is called the median cost. Thus such widely different costs as \$2.92, \$2.80, and \$2.60-\$2.69 may be said to be representative of the industry, although they indicate central tendencies from different points of view. For the purpose of regulating prices on the basis of representative costs, these points of view are not equally satisfactory in all cases. As a matter of fact, none of these views is satisfactory in attempting to regulate market prices for goods produced privately under conditions of competition. The reasons for this will be pointed out in the following chapter.

#### QUESTIONS

1. "The most fundamental costs of production are the human costs." Explain.
2. "Money costs reflect the degree to which human costs are incurred in the process of producing goods." Evaluate.

3. Point out some of the ways in which attempts have been made to bring money costs more closely in line with human costs.
4. What is meant by the statement that "costs are influenced by the purpose for which they are calculated"?
5. How, if at all, does the element of time affect costs?
6. "At best costs are nothing more than careful estimates based on assumptions." Evaluate.
7. "To fall within the group of variable costs, the amount of any individual item may or may not change in the same direction as output." Explain.
8. What is meant by fixed costs?
9. "Wages are a type of variable cost and interest a type of fixed cost." Evaluate.
10. How, if at all, does the element of time affect the status of costs as fixed or variable?
11. "There are different types of variable costs depending upon the way in which they are affected by changes in output." Explain.
12. Why is it that fixed costs encourage price cutting to a greater extent than variable costs?
13. Why is it that aggregate costs show a persistent tendency to vary directly with the volume of output?
14. If aggregate costs tend to vary directly with the volume of output how is it possible that unit costs may increase, decrease, or remain constant?
15. What is meant by differential costs?
16. "A comparison of total and differential costs may show that seemingly profitable business is unprofitable and that seemingly unprofitable business is profitable." Explain this statement and point out why total costs may be an unreliable guide for a concern to follow in expanding or contracting its operations within the limits of existing facilities for production.
17. Under what circumstances does joint production occur?
18. "The determination of cost for individual products is purely arbitrary under conditions of joint production." Do you agree? Give reasons.
19. Point out how representative costs were originally used to describe long-run tendencies of unit costs with respect to entire industries.
20. What difficulties are encountered when attempts are made to use the idea of representative costs for purposes of regulation?

## CHAPTER XVIII

### COMPETITIVE PRICES

WITH the two immediately preceding chapters as a background, attention may now be turned to the manner in which prices are determined. In this connection several types of prices may be distinguished. For convenience they are designated here as competitive, privately regulated, and governmentally regulated. The present chapter deals with the first of these, and successive chapters will cover the other two types.

Competitive prices for goods of any kind, it will be recalled, are those which result from the rivalry of numerous buyers and sellers with knowledge of conditions affecting the demand for and supply of the goods. There is rivalry among buyers to obtain the available goods and rivalry among sellers for the available purchasing power. Only if buyers and sellers are numerous will it be impossible for any one buyer or seller to dominate price. Knowledge of conditions affecting the market is essential for buyers and sellers to act in their own interests. Without it buyers do not know how much they must pay to obtain the goods they want, and sellers do not know how much they can get for their goods. The market is not necessarily a particular place where traders assemble, but the area over which offers to buy and offers to sell some specific commodity or service can exert an influence on the terms of trade for that commodity or service.

While the conditions necessary for perfect competition do not exist in the world of reality, the conditions under which some trading occurs results in prices which tend to be more distinctly competitive than with other trading. The nearest approach to perfect competition occurs on the organized produce exchanges, but even here not all the conditions are met. For instance, "corners" develop at times and the exchanges may deliberately regulate trading by closing the exchange or by setting limits

beyond which prices cannot fluctuate on any day. Nevertheless, the prices on these exchanges illustrate a fundamental characteristic of competitive prices, namely that they are extremely flexible. They rise and fall quickly in response to changes in the conditions of demand and supply. The prices of such commodities as sugar, coffee, rubber, cotton, and wheat often change from minute to minute on the exchanges. Not only present circumstances but expectations of the future are constantly influencing prices. Consequently, in order to describe price tendencies of a commodity for a single day on these exchanges it is necessary to know the opening and closing, the high and low, and the average prices.

In examining competitive prices attention will center on three major points: the circumstances affecting the determination of market prices, the relation of market prices to costs of production, and finally the long-run tendencies of prices.

## I. MARKET PRICES

### A. WITH A GIVEN DEMAND AND SUPPLY

The prevailing price in a competitive market represents the composite influence of many, and often conflicting, circumstances surrounding numerous buyers and sellers. The purpose of this price is to bring the quantities taken and the quantities offered into balance. But here it becomes necessary to distinguish quantities which are offered at reserved prices and those offered at unreserved prices. The prevailing prices in the two cases are likely to be quite different.

*Unreserved Prices.* When goods are offered at unreserved prices, the price which tends to prevail in the market is determined by the demand as it exists at that time. Suppose a severe storm has delayed the delivery of a trainload of Christmas trees until the day before Christmas. Under these circumstances the dealers to whom the trees are consigned have no bargaining power. The trees cannot be stored for later sale, they cannot be shipped elsewhere, and they have no scrap value. Consequently sellers must offer them at unreserved prices.

This is indicated by the S line of Figure 49. These trees will not all sell at exactly the same price, but assuming that they are substantially the same quality, the competition among buyers to get trees and among sellers to dispose of them will force prices to the level of about 50 cents each. The point at which the D and S lines intersect indicates the price which will tend to prevail for the quantity offered in the market at that time. At a price of 50 cents the quantity offered and the quantity taken are brought into balance.

It might seem that the dealers would have benefited by offering only a part of the entire shipment for sale. If the demand has been inelastic, the dealers would have

benefited by offering a smaller quantity for sale. But competition does not encourage the destruction of a part of the quantity in order to get a larger price for the remainder. Each dealer is seeking to get as much for his lot of trees as he can. With numerous dealers, no one of them could appreciably influence prices if he destroyed his entire lot. Since his competitors alone would benefit, there is no incentive for him to withhold any of his trees from the market. In fact when competing dealers offer goods at unreserved prices a characteristic of the market price is that it tends to be that which will result in the sale of the entire quantity available for sale at that time.

*Reserved Prices.* Most goods are not offered for sale at any given time for whatever they will bring. Instead they are offered subject to minimum or reserved prices below which the suppliers prefer to hold the goods for future sale. This applies

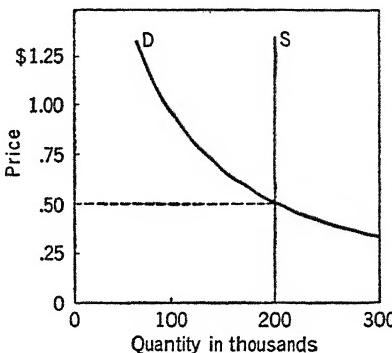


FIGURE 49. DETERMINATION OF COMPETITIVE PRICE WHEN FIXED QUANTITY OF GOODS IS OFFERED AT UNRESERVED PRICES WITH A GIVEN DEMAND

whether goods are reproducible or whether their aggregate quantity is rather permanently fixed. The reserved prices are not the same for all suppliers, and may not be the same for the entire quantity which any one of them has at his disposal.

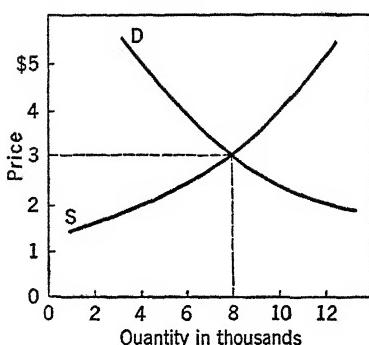


FIGURE 50. DETERMINATION OF COMPETITIVE PRICE WHEN GOODS ARE OFFERED AT RESERVED PRICES WITH A GIVEN DEMAND

Traders at times offer a part of their goods at lower prices than those at which they are willing to sell the remainder. The various prices at which suppliers stand ready to sell or withhold goods at any given time and place give rise to a supply schedule as represented by line S in Figure 50. The demand schedule at the same time is represented by line D. Here also the point at which these two lines intersect represents the price which balances the quantity offered and the quantity which will be taken.

At a price of \$3 the quantity offered will be 8000 units and the same quantity will be wanted at that price. It must be kept in mind that "demand" is used here in a trading sense which embodies both desire and purchasing power. Consequently when reference is here made to the quantity of goods wanted, that quantity is the amount which prospective buyers stand ready to purchase. It is in this sense that the terms "want" and "wanted" will be used throughout the present analysis of demand and supply forces.

Not only does the competitively determined market price bring the quantities offered and those wanted into balance, but this price is the only one at which the balance can exist. Some buyers would be willing to pay higher prices rather than do without the goods, and some sellers would offer their goods at lower prices rather than not sell them at that particular time. But the alternative quantities which would be offered and purchased at other prices are not in balance. For instance, at a

price of \$2 there would be only 4000 units offered for sale, although at that price 12,000 units would be purchased. Competition among buyers for the 4000 units would force the market above \$2. At a price of \$4 there would be 10,000 units offered and only 6000 wanted. Here competition among sellers to dispose of the 8000 units would force prices below \$4. Only at \$3 will the quantity offered and sold be in balance.

#### B. WITH CHANGES IN DEMAND AND SUPPLY

From time to time conditions in the market change. As already noted with the organized produce exchanges these conditions may vary from minute to minute. In less highly organized markets the changes are likely to be less frequent. In any case the changes may occur in demand, in supply, or in both simultaneously. These variations are likely to affect the market price although they may not.

*Shifts in Demand.* If supply remains the same, the market price for any commodity or service tends to vary directly with the change in demand; an increase in demand will raise price and a decrease in demand will lower it. This is illustrated by the diagrams in Figure 51. The heavy solid lines marked D and S represent respectively the original demand and supply schedules, while the heavy broken line marked D' represents the changed demand. Originally, as shown in both diagrams, the market price was \$2. At this price buyers were willing to purchase 6000 units and suppliers were willing to furnish the same quantity. Thus there is a balance or equilibrium at this point.

(a) *Increased Demand.* Now suppose demand increases with no change in the willingness of suppliers to furnish various quantities at the same prices as before. It will be recalled from a previous chapter that an increase in demand means either the same quantity taken at a higher price or a larger quantity at the same price. The increased demand is represented by the broken line marked D' in the left diagram. For each of the quantities shown along the base line a higher price will be paid, or at each price along the vertical scale a larger quantity will be taken. The old market price of \$2 cannot continue under the

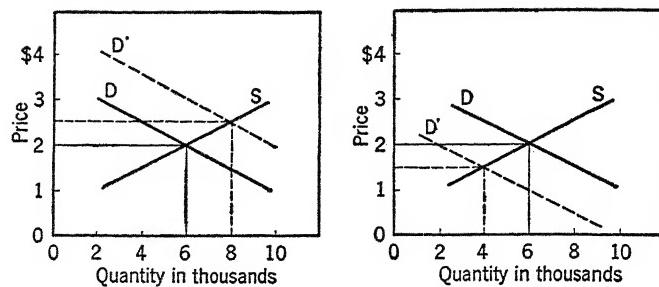


FIGURE 51. COMPETITIVE PRICE WITH CHANGE IN DEMAND BUT NO CHANGE IN SUPPLY

new conditions. At that price the buyers now want about 10,000, but the sellers would be willing to furnish only 6000 as before. Rivalry among buyers for the available quantity would force prices up, and as they went higher suppliers would be willing to furnish more goods. Under the new conditions a price of \$2.50 is necessary to bring the quantity wanted and quantity offered into balance. At this price buyers would take 8000 units and sellers would be willing to furnish the same quantity.

(b) *Decreased Demand.* On the other hand with no change in the supply schedule there may be a decrease in demand. Now buyers will not take the same quantities at the same prices. This is represented by the broken line marked  $D'$  in the right diagram. For any quantity indicated along the base line a lower price will be paid. No longer will the original market price of \$2 tend to prevail. At that price sellers would offer more goods than buyers would want. Only 2000 units would be wanted as against 6000 offered. Rivalry among suppliers would force selling prices down. But at lower prices smaller quantities would be offered for sale. A new equilibrium would come to be established at \$1.50. At this price suppliers would furnish the same quantity as buyers want, namely 4000 units.

*Shifts in Supply.* When demand remains the same prices tend to vary inversely with changes in supply; an increase in supply will lower the market price and a decrease in supply will raise it. The diagrams of Figure 52 illustrate this. Here again

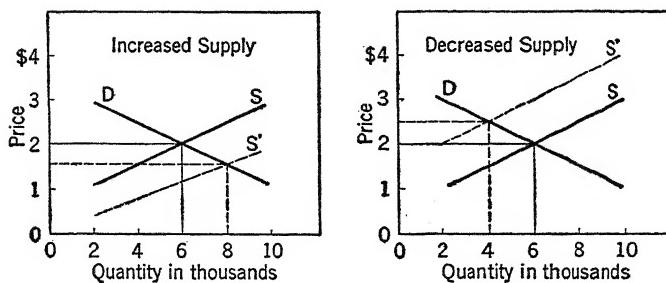


FIGURE 52. COMPETITIVE PRICE WITH CHANGE IN SUPPLY BUT NO  
CHANGE IN DEMAND

the heavy solid lines represent the original schedules of demand and supply, with the broken heavy line marked  $S'$  representing changes in supply as between two periods of time. These diagrams are drawn so that the original equilibrium occurs at a price of \$2 for a quantity of 6000 units as in the immediately preceding diagrams.

(a) *Increased Supply.* It has been noted that an increase in supply over a period of time occurs when either the same quantity is offered at lower prices or a larger quantity at the same price. This is indicated by the  $S'$  line in the left diagram. Any quantity along the base line will be furnished at a lower price than formerly and at any given price a larger quantity will be offered than before. Whereas suppliers were originally willing to furnish 6000 units at \$2, they will now furnish that quantity at \$1. But at this price buyers would take 10,000 units on the basis of their demand schedule, which remains unchanged. If only 6000 units were furnished the rivalry of buyers would force the market price above \$1. On the other hand, at the original market price of \$2 suppliers are now willing to furnish 10,000 units instead of only 6000, although buyers continue to want only 6000 at this price. Any attempt to dispose of 10,000 units would drive the market price down. Neither the original price nor quantity will permit a market equilibrium with the increased supply. Competitive forces will bring prices down to \$1.50, where the same quantity will be taken as is offered, namely 8000 as against 6000 units at the original price of \$2.

(b) *Decreased Supply.* When the same quantity is offered only at a higher price than formerly, or a smaller quantity is offered at the same price, there is a decrease in demand. This is represented by the  $S'$  line in the right-hand diagram of Figure 51. Whereas suppliers were originally willing to furnish 6000 units at \$2, that quantity will now be furnished only at a price of about \$3. At this higher price buyers do not want more than 2000 units. On the other hand, at the original market price of \$2, only 2000 units will be furnished as against 6000 wanted. Consequently there must be readjustments in quantities and prices. The point of new equilibrium with decreased supply is at a higher price for a smaller quantity of goods than formerly. Only at the higher price of \$2.50 is the quantity offered equal to that wanted, and the amount is 4000 instead of 6000 units as before.

*Shifts in Both Demand and Supply.* While shifts in either demand or supply are not unusual, frequently shifts occur simultaneously in both. One may increase and the other decrease, or they both may either increase or decrease.

In any event the one may change rapidly and the other slowly.

(a) *No Price Change.* Under some circumstances there may be changes in both demand and supply without altering the market price. An illustration of this is given in Figure 53. Originally 6000 units were offered and taken at \$2 per unit.

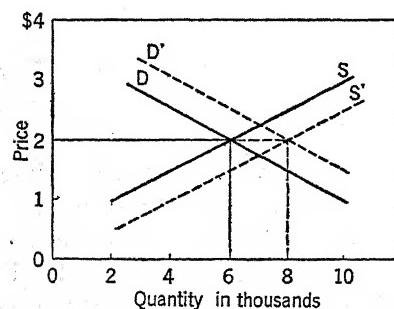


FIGURE 53. COMPETITIVE PRICE REMAINING CONSTANT WHEN DEMAND AND SUPPLY BOTH CHANGE

unit, as indicated by the intersection of lines  $D$  and  $S$ . When demand and supply changed they both increased, as indicated by lines  $D'$  and  $S'$ . The new equilibrium resulted in a larger quantity offered and taken, namely 8000 units, although the price remained at \$2. The shift might have been in the opposite direc-

tion with both decreasing. Here also the simultaneous decline might have been such that the same market price would have tended to prevail although for a smaller quantity of goods.

(b) *Price Changes.* It is rather unlikely that changes in competitive demand and supply will be such that market prices remain unchanged. In some cases the changes are of a nature which result in the same quantity's being offered and taken, but at either a higher or a lower price than formerly. In other instances the quantity as well as the price may change. The latter is illustrated in Figure 54 with a decreased demand and increased supply. Instead of the original point of equilibrium at \$2 for 6000 units, the new market price becomes \$1 with 7000 units wanted and furnished.

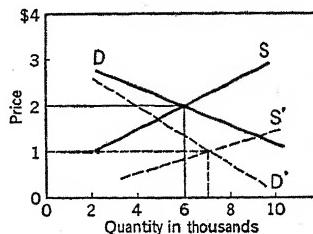


FIGURE 54. COMPETITIVE PRICE CHANGING WHEN DEMAND AND SUPPLY BOTH CHANGE

## II. RELATION OF MARKET PRICE TO COST

It is frequently said that the price which prevails in a competitive market at any given time for a commodity or service tends to equal the cost of production. The validity of this statement depends on what costs and whose costs are being considered. In a preceding chapter attention was called to proposals for avoiding price cutting among competitive concerns by regulating the prices which any concern could lawfully charge on the basis of the average or representative costs for the industry as a whole. At that time mention was made of the fact that the usual ideas of average or representative costs are not suitable for purposes of price regulation among directly competitive enterprises. Nor will such costs throw any light on the market prices which tend to prevail during short periods of time when the productive facilities and methods of operation for an industry remain substantially the same. The reasons for this will now be considered.

#### A. INDUSTRY AS A WHOLE

Costs are incurred, of course, by individual enterprises and not by an industry as a whole. For some purposes it is necessary, however, to consider the costs which apply to the entire industry. At the same time the costs which are significant for some purposes are of no importance for others.

*Total Costs.* If market prices tend to equal cost of production, one might interpret this to mean that prices approximate the average unit cost for the industry as a whole. By combining the production or volume of business for all concerns in the industry and dividing this into their combined costs, the total unit cost for the industry is obtained. This represents, it will be recalled, the pro-rata share of the aggregate cost when that cost is distributed evenly over the entire production. For some purposes such an average for an entire industry is as significant as a similar average for individual enterprises within the industry. But an average of this kind throws no light on the level of competitive prices in a market. Those prices have no tendency to approximate the total unit cost for the industry as a whole.

*Marginal Costs.* Various portions of the aggregate quantity of any commodity or service are not produced at the same unit costs. Usually there is a very wide range between the lowest and the highest costs. An illustration of this in the production of corn is furnished by a sample survey in 1929 by the United States Department of Agriculture. Returns from over 4000 crop reporters indicated that some land then used yielded 58 bushels or more per acre with an average net cost of 52 cents per bushel. At the other extreme some land yielded less than 7 bushels with a unit cost of \$3.91. Even if this extremely low yield is disregarded, the next lowest was between 8 and 17 bushels with a net cost of \$1.26 a bushel.

When goods are competitively produced at different costs, the market price tends to the level of the highest unit cost necessary to bring forth a sufficiently large quantity to balance the amount wanted at that price. The additional production which is brought forth at cost just barely covered by the

market price is said to be the marginal production, and its cost is the marginal cost for the industry's entire production. The need for additional production is met partly by the more efficient concerns operating more intensively, and partly by less efficient producers coming into the field to relieve the pressure. It will be recalled that as even the most efficient concerns push their operations beyond their normal capacity the differential costs rise rapidly. So long as market prices are above these costs there will be an advantage for concerns to expand their output. If the buyers had to depend entirely on the production of these concerns which were operating far beyond their normal capacity, selling prices would go higher than when the pressure for more goods is relieved by concerns which are less advantageously located with respect to the market, have poorer facilities for production, use lower grades of labor, have less efficient management. As selling prices rise these less efficient producers contribute to the marginal production and help to relieve the pressure.

This point has already been encountered in the chapter dealing with natural resources. There it was noted that when land of any grade was utilized beyond a certain point, diminishing returns or increasing costs developed. As the better grades of land are pushed further and further beyond the point where diminishing returns begin, the per unit cost for additional output mounts rapidly. This opens the way for poorer land to be cultivated advantageously. The cost of producing additional units on this marginal land is no higher than the cost of additional production obtained by utilizing the better land more intensively. The different grades of land which are employed tend to contribute parts of the marginal production by which the aggregate quantity of goods offered and that wanted are brought into balance at a price which just covers the unit cost of this marginal production.

*Bulk-Line Costs.* If the conditions under which production of goods actually occurs were such that production adjusted itself quickly and closely to changes in demand, there would be no tendency for goods to be furnished at costs above market

prices, and the costs which prices tend to cover would be those of the marginal production for the industry as a whole. When prices fell, the least efficient production would cease and aggregate output would decline to a point where the market price covered the new marginal costs. With higher prices, additional production would be forthcoming to the point where market price equaled the cost of the least efficient production needed to balance the demand and supply.

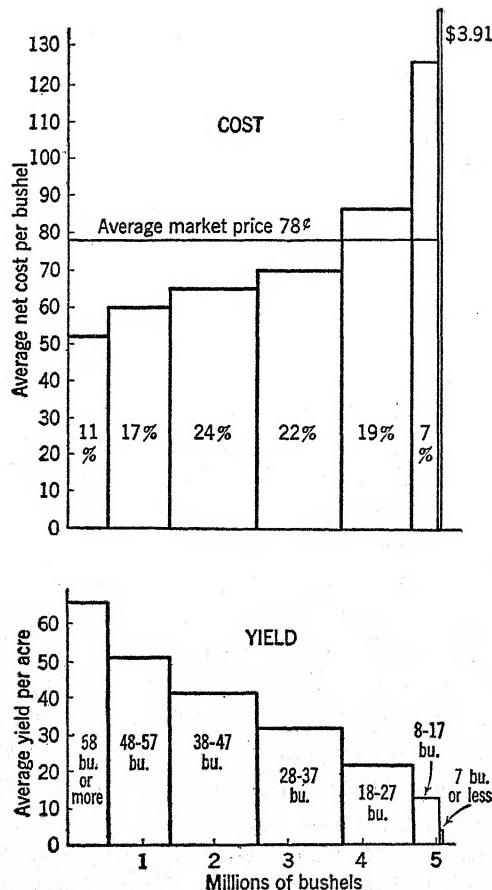


FIGURE 55. COST PER BUSHEL AND YIELD PER ACRE  
IN PRODUCTION OF CORN

In reality such close adjustment of production to demand does not exist. Most goods are produced in anticipation of demand, and this gives rise to errors in judgment. Moreover, high-cost production does not contract quickly. Consequently there is always a portion of the aggregate production whose cost is above the market price. This is illustrated by the previously mentioned survey of cost for corn production, as shown by Figure 55. The lower diagram shows the varying yields per acre. These are arranged in descending order of size, the width of each block indicating the total amount produced at the average yield indicated by the height of the block. Within the block is shown the range of yields from which the average yield is computed. The upper diagram shows the average cost per bushel at which the various yields were obtained. The width of each block shows the total amount produced at the average cost indicated by the height of the block, and the percentage figure shows the portion of the total surveyed crop produced at the designated cost. In determining the net cost for grain, the product value of stover and fodder has been deducted. The average price received by farmers for corn in 1929 was 78 cents, and this is indicated by the horizontal line designated market price. It appears, therefore, that a considerable part of the surveyed crop was produced at unit costs considerably below the market price, but some had a cost in excess of that price. This was definitely the case with the one half of 1 per cent having an average cost of \$3.91 and the 7 per cent with a cost of \$1.25. Also a portion of that with an average cost of 87 cents. Probably 15 or 20 per cent of the crop was produced at a cost in excess of the market price, while the highest total unit costs necessary to produce the bulk of the crop were covered by the average market price of 78 cents.

The proportion of aggregate production which the market price tends to at least cover varies from time to time. In any line of business the portion is larger in periods of prosperity than in times of depression. With the extremely depressed agricultural conditions in 1931, another corn survey indicated

that for the same yields per acre costs ranged from 42 cents to \$3.94 and at the various costs about the same proportion of the total surveyed crop was produced. In this year, however, the farmers received an average price of 26 cents a bushel, so that the average costs were not covered for the production coming from the land with highest yield and lowest per bushel cost. Such a situation is unusual, but suggests the very important point that after goods have been produced the price at which they sell at any given time does not necessarily bear any relation to the costs of production. The costs are water that has gone over the dam. But such a situation cannot persist, and the general tendency will be for the market price of any commodity or service to equal the highest unit costs incurred in furnishing the bulk of the total production. If production were perfectly adjusted to demand, the market price would tend to cover the marginal costs for the industry as a whole.

When goods are produced jointly the same tendency holds, but here the costs which market prices tend to cover are those for joint production. This is especially true when two or more of the products each have considerable value. When by-products have little value, such as fodder, the income from them is so negligible that they influence very slightly the quantity of the joint production. But when two or more of the products each have considerable value, their combined prices rather than their individual prices determine the extent of the joint production. If, however, as is usually the case, each of the products has some separate costs involved in preparing it for market, this cost is likely to influence the quantity of the particular product which will be offered for sale. The market price for straw would have to cover at least the cost of baling, otherwise it would be more economical for the farmer to dispose of any commercial quantity by burning it. Thus the minimum price for any one product would tend to be the highest cost required in special processing of such aggregate quantity as is needed to balance the demand. How much above the minimum the actual price for any one of the jointly

produced goods tends to be determined by the demand for the individual product.

#### B. INDIVIDUAL CONCERNS

While the production which influences market prices is that of the entire industry and not that of individual units within the industry, there are certain tendencies of cost with respect to these units which may be noted.

*Total Cost.* At any given time there are likely to be wide differences in the total unit costs among the producing units of an industry. The beet-sugar industry will serve as an illustration of this. In Figure 56 factories are arranged in ascending order of their total cost per ton of sugar. Some factories had a cost as low as \$80 a ton, while others had costs of \$210. The width of each block indicates the quantity which the factory produced. Even though the largest factories did not have the lowest costs there was a tendency for costs to be lower among the larger than among the smaller factories. The three lowest-cost factories together produced nearly 100,000 tons, or about

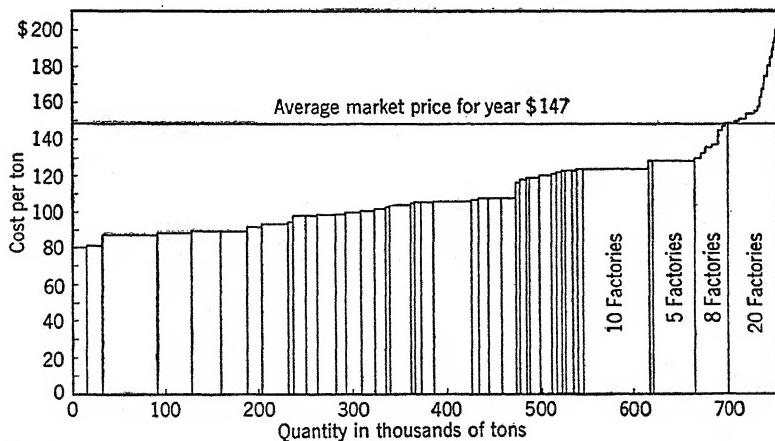


FIGURE 56. COST PER TON OF SUGAR FOR INDIVIDUAL FACTORIES IN THE BEET-SUGAR INDUSTRY

Factories arranged in ascending order of the total costs per ton and width of each block shows size of factory production. Adapted from *Practical Economics*, by Shearman, and published by McGraw-Hill Book Company, Inc.

twice as much as the twenty with highest cost, whose combined production was roughly 50,000 tons.

Whatever the range of costs may be among the individual establishments in an industry, the market price is likely, even in periods of poor business, to more than cover the costs for most of them, just cover costs for others, and not cover the costs of still others. When there are numerous competitive establishments with no one of them in a position of dominating importance, the majority are generally in the group having costs more than covered, while a small number are on the border line, and a somewhat larger number beyond the border where market prices cover costs. This is not surprising since market prices tend to equal the costs of the marginal production under conditions of perfect adjustment, and to equal bulk-line costs when the adjustment is imperfect. The proportion of producing units whose total costs are not covered is, however, considerably larger in periods of depression than in times of business prosperity.

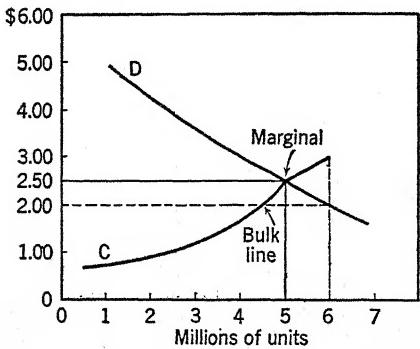


FIGURE 57. MARGINAL AND BULK-LINE PRICE

The extra-marginal concerns, or those whose total costs are not covered by selling prices, do not constitute a large proportion of the total, nor do they furnish a large part of the total production, but they do exert a strong influence on the market price. It is their presence in the market which is influential in driving prices below the cost of the marginal or highest cost

firms ordinarily needed in the industry to balance the demand. This is illustrated by Figure 57, in which line D represents the demand and line C represents the total unit costs at which concerns produced various parts of the aggregate output of 6,000,000 units. With perfect adjustment the market price would be \$2.50, and this would be the cost of those concerns whose production was necessary to furnish the entire quantity at that price. However, 6,000,000 units were offered for sale and this quantity will be taken only at \$2 on the basis of the demand schedule. Consequently \$2 will tend to be the market price. This does not cover the marginal costs, but merely the highest costs for the bulk of the production or 4,500,000 units.

*Differential Cost.* In a previous chapter attention was called to the importance of differential costs in determining the extent to which individual concerns would find the utilization of their existing facilities for production advantageous. It was noted that when producing units are operating below normal capacity, the differential unit costs for additional production are lower than the total unit cost for the entire output, and that when operations are beyond normal capacity, differential costs are higher than total costs per unit. With unused capacity additional production is advantageous so long as the selling prices furnish anything more than differential costs, even though the prices are below total unit costs. When, however, facilities are being utilized beyond normal capacity, the selling price for additional production which covers only total unit costs results in a loss. Prices must at least cover differential costs for additional production to be advantageous.

Under competition market prices not only tend to cover the costs for the bulk-line production of an industry, but show a distinct tendency to cover the differential costs of the individual producing units within the industry. If information were available as to the differential costs per ton of the sugar factories represented in Figure 56, such information would probably show that the factories with low total costs had pushed their operation to a point where the differential costs were close to the market price of \$147 a ton. By so doing these

concerns would reap the largest net gains. On the other hand, the factories with total costs above the market price were probably producing to a point where the market price at least covered their differential costs. These concerns were not making profits but were minimizing their losses. If over a period of time they did not receive more than these differential costs, they would be forced to abandon operations. In the meantime it is probable that they together with the other factories in the industry were producing to a point where their differential costs were much the same and tended to equal the market price.

### III. LONG-RUN PRICE TENDENCIES

A characteristic of competitive prices is that they are sensitive to changes in the conditions of demand and supply. Some of the changing conditions are of only passing significance and expend their influence rather quickly. New hotels are not constructed in a city merely because there is an occasional convention which requires more facilities for adequate accommodation than the existing hotels can furnish. On the other hand, there are forces which operate over a period of time and exert long-run influences on the course of prices for particular commodities and services.

#### A. QUANTITIES AND COSTS

*Quantity Wanted.*<sup>1</sup> On the demand side the changes which exert long-run influences on prices are likely to occur rather gradually. This is due partly to the influence of population. It has already been noted that this country, as well as most of the other countries, has experienced an increasing population. This in itself operates to increase the aggregate quantity of most goods which is wanted. But it has also been noted that for some years the rate of population growth has been declining, and this has a curbing influence on the demand for some

<sup>1</sup> Here, as elsewhere in the chapter, it will be recalled that the expression "quantity wanted" refers to the amount which prospective buyers stand ready to purchase and not to the amount they may desire without regard to their purchasing power.

products. As domestic population increases through births, manufacturers of baby carriages and children's garments have an expanding market, but with declining birth rates the demand increases less rapidly. When a stationary population is reached there will be no opportunity for expansion of the market because of the birth rate. At the same time, with the average age of the population increasing there will be an expanding market for those goods required by old persons, such as wheel chairs.

The gradual changes in population growth are by no means the only influences operating to bring about long-run changes in the productive facilities of an industry. For instance, this factor is of comparatively negligible importance in the "farm problem." That problem has been made particularly severe by a sudden increase in demand during the World War when this country was heavily relied upon to feed the allied countries. Then a rather sudden fall in demand occurred after the war when European nations began to produce more of their own food. But long-run influences were also at work. With the wave of nationalism which swept the world after the war, not only did nations begin to produce more of their own food, but many of them began to rely more upon themselves and their territorial possessions for agricultural raw materials than before the war. This may result in a permanent decline in demand for United States output of such crops as cotton and wheat. A more gradual change has come with the automobile, truck, and tractor taking the place of horses and mules. These mechanical devices are estimated to have displaced 10,000,000 animals which formerly required the equivalent of around 40,000,000 acres on which such animal food as hay was produced. Scientific developments may create new uses for agricultural products to a degree greater than previously required to grow animal food. In the meantime productive facilities must be adjusted to a reduced demand. A more permanent influence has been the gradual change in dietary habits. Less food per capita is being consumed today than in former years. To some extent this may be attributed to the less arduous labor required when machines instead of men

furnished the power with which goods are produced. Then, too, with more persons living and working in comfortably heated places, the human furnace needs less fuel in the form of food with which to generate heat for the body. The decline in food consumption per capita does not affect all commodities equally. While individuals are eating less meat, they tend to eat more fruit and vegetables. Even though the changes which exert long-run influences on demand do not always create the acute problem encountered in agriculture, they exert their influence on the tendency of prices over a span of time.

*Quantity Produced.* On the supply side there are likewise long-run changes. These center around the availability of the needed factors for production, the efficiency with which these are organized, and the improvements in the technique of production. It has been seen that in the earlier days of this country the number of workers available, in relation to land and capital, imposed a severe limitation on industrial development. It was the influence of this limitation which led to the open-door policy of immigration. Even when immigration was at its height, the yearly increase in the total number of available workers was rather gradual. It has also been noted that the efficiency with which the factors of production are organized and coordinated affects the quantity of goods which can be furnished, and that within limits these factors can be organized more economically as the scale of operations increases. Especially is this the case where there are extensive opportunities for specialization of labor and equipment. Closely related to these changes are those which arise through invention and improvements in the technique of production. Some inventions and technical improvements can be used advantageously without much regard to whether production is organized on a large or a small scale, but in other cases the advantages are possible only with large-scale operations. Then, too, the influence of many improvements tends to spread rather gradually. A new type of machine does not lead to an immediate scrapping of all the old models. The replacements are likely to occur more or less slowly. Many technical improvements

occur within individual concerns which make efforts to prevent their passing to others either through secrecy or patents. In the course of time they spread and become available to all.

*Costs.* These circumstances on the supply side influence the long-run cost tendencies for an entire industry. As one concern after another expands its scale of production it encounters certain cost tendencies which operate rather generally throughout the industry. Their total unit costs tend therefore to move in much the same direction even though at different speeds. In this connection, it will be recalled, the idea of representative costs is sometimes used. These serve in describing the course which the level of costs for an industry as a whole takes over a span of time sufficiently long to permit the readjustment of productive facilities to a long-run increase in demand. Thus entire industries may be said to experience increasing, decreasing, or constant unit costs when the scale of their operations is expanded.

A more satisfactory description of long-run cost tendencies, however, would seem to be obtained by focusing attention on the marginal firms, or the least efficient ones which are needed in the industry to bring the quantity of goods offered for sale in balance with the quantity wanted. Expansion in productive facilities does not occur evenly among all the enterprises in an industry. Some are expanding when others are declining; some are expanding more rapidly than others. Some are leading in experimental work and the adoption of improved technique for production. Knowledge of improved methods of production available to the entire industry is used more fully by some enterprises than by others. With whatever unevenness these and other changes occur, there are always differences in cost as among the enterprises. Furthermore, there are always marginal firms. This does not mean that the same firms are marginal at all times. Concerns which are efficient and low-cost producers at one time often slip for various reasons and ultimately become marginal firms, with their total unit costs just barely covered by the market price. On the other hand, some of the marginal firms at one time improve their

efficiency and reduce their costs so that at a later time they are among the more efficient concerns in the industry. Nor does the fact that there are always marginal firms in an industry mean that the level of their costs is necessarily the same at all times. What their level tends to be depends on how much of the aggregate production is furnished by the more efficient concerns operating at lower costs. Consequently, whether the representative or average level of costs for an entire industry is increasing, decreasing, or remaining constant, the level of cost for the marginal producers is of dominating importance with respect to prices.

#### B. PRICE TENDENCIES

Long-run tendencies of both costs and prices in an industry usually refer to increased production arising out of expanded facilities of production. The emphasis on expanding production is accounted for largely by the persistent influence of a growing population. Expansion might occur quite independently of the size of population, but its growth creates a pressure for greater production and this pressure is distributed quite widely among industries. There are always some declining industries, but these are few in relation to those which are expanding.

*Increasing Prices.* When the expansion of an industry encounters diminishing returns or increasing unit costs, the long-run tendency of prices for goods of that industry is upward. This does not mean that the prices are always rising. They fluctuate as do all other prices in response to seasonal and cyclical changes in demand and supply. There are also unforeseen events which cause temporary price fluctuations. But running through the fluctuations is a distinctly upward tendency of prices when allowances are made for changes in the purchasing power of money. Expansion in such industries usually follows an increase in demand which drives prices sufficiently high to warrant expansion of production on the basis of higher cost.

*Decreasing Prices.* When expansion makes possible a lower

level of costs in an industry, the long-run tendency for the prices of goods is downward. Here likewise there is not a continuous unbroken movement in this direction. There are always fluctuations prompted by rather temporary changes in demand and in the extent to which existing facilities for production are utilized. Running through these price fluctuations there is a persistent tendency to a decline, provided allowance is made for any changes in the general price level. When an industry is subject to decreasing costs the expansion is not so likely to await an increase in demand with temporarily higher prices stimulating expansion in productive facilities. Instead, concerns are likely to anticipate the economics of large-scale operation and endeavor to stimulate demand.

*Constant Prices.* With expansion which encounters no increase or decrease in the level of unit costs there is a tendency for prices in the industry to remain constant. Again there are numerous fluctuations along the general course, but when allowance is made for any changes which have occurred in the purchasing power of money the broad tendency is toward constant prices.

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Competitive prices tend to bring about an automatic balance between the quantity of goods which prospective buyers stand ready to purchase and those offered for sale. When goods have already been produced, the price at which this balance occurs from day to day has no consistent relation to any production costs. During relatively short intervals of time in which the productive facilities for any industry remain substantially unchanged, the market price tends to equal bulk-line costs. If there were perfect adjustment of production to demand the prices would tend to equal the marginal costs of production for the industry as a whole. Most of the concerns in the industry contribute to the marginal production. Over relatively long intervals of time in which productive facilities themselves are subject to change, prices tend to the level of the total unit costs for marginal concerns. These are the highest cost and least efficient enterprises whose presence in the industry is

needed to bring about a balance between the aggregate quantity wanted and that produced. During periods of time sufficiently long to permit expansion in productive facilities, prices may follow an increasing, decreasing, or constant course.

### QUESTIONS

1. What circumstances are essential for strictly competitive prices?
2. "A market is a place where buyers and sellers meet." Evaluate this statement.
3. Do the conditions essential for genuinely competitive prices usually exist in a market?
4. What is meant by unreserved prices?
5. What is meant by the statement that "competitive prices bring the forces of demand and supply into balance"?
6. Illustrate, by diagrams, how reserved and unreserved prices are determined under conditions of competition.
7. "An increase in demand results in higher prices and a decrease in demand brings lower prices." Evaluate this statement, pointing out what is meant by an increase and by a decrease in demand.
8. "Producers are reluctant to increase supply since this means lower prices." Do you agree? Explain.
9. Explain why deliberate curtailment of production for purposes of raising prices is not encountered under strictly competitive conditions.
10. "Competitive prices tend to equal costs of production." Is this statement valid? Explain.
11. Distinguish between total and marginal unit costs for an industry as a whole.
12. How do bulk line costs differ from marginal costs?
13. Under what circumstances may it be said that selling prices bear no necessary relation to any costs of production?
14. Explain how competitive prices are determined for jointly produced goods.
15. In what sense can marginal concerns be said to be essential for a balanced market?
16. "While the extra marginal concerns do not ordinarily produce any considerable part of the total output of an industry, these concerns are in a position to exert a strong influence on market prices." Explain.
17. One person contends that as between concerns in an industry there is a tendency for distinctly different unit costs to exist, while another argues that costs tend to be uniform. How, if at all, might these two views be reconciled if a distinction is made between total and differential costs per unit.
18. What is meant by "long-run price tendencies"?
19. "Long-run changes in the quantity of goods wanted is determined by the growth of population." Evaluate.
20. What circumstances contribute to long-run changes in the quantity of goods produced?

## CHAPTER XIX

### PRIVATELY REGULATED PRICES

IT HAS been seen that distinctly competitive prices are determined by the interplay of rival buyers and rival sellers, with none in either group in a position to influence the market prices. These prices are extremely flexible and serve to automatically balance the quantity which prospective buyers stand ready to purchase of any commodity or service and the quantity offered. In a sense the prices operate as traffic signals directing the production and consumption of particular goods.

Competitive prices need not move along with the general level of prices in order to be flexible. Changes in the purchasing power of money affect the money costs of production and the money income of consumers, and thereby exert an influence on market prices for most goods. The particular circumstances of demand and supply which surround any given commodity or service may more than offset the influence of changes in the purchasing power of the dollar. Consequently when the general price level is moving in one direction the prices of some goods move in other directions. But in the absence of offsetting circumstances competitive prices are sensitive to changes in the general price level.

#### I. INFLEXIBILITY OF PRICES

##### A. TENDENCY TO INFLEXIBILITY

Not all prices, however, are flexible with respect to changes in market conditions when the general price level remains the same, nor with respect to most price level changes. Some prices show a persistent tendency to be rigid and inflexible. The contrast in the case of steel rails and steel beams is illustrated by Figure 58. For a period of eleven years before the World War, when the general level of prices was rising, the

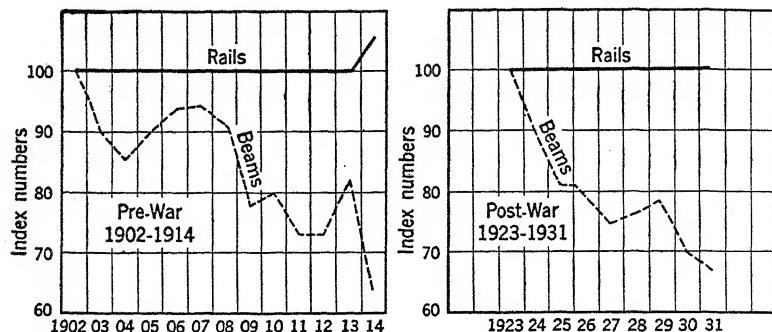


FIGURE 58. FLEXIBLE AND INFLEXIBLE PRICES AS ILLUSTRATED BY PRICES OF STEEL BEAMS AND RAILS

From Cleveland Trust Company Bulletin.

price of rails remained unchanged at \$28 a ton, while structural steel prices tended to fall. After the war, the prices of rails again remained unchanged, although at a higher level of \$43 a ton, for a number of years, while the prices of beams again tended to decline. During most of this post-war period the general price level was fairly stable; not until 1929 did its most sensational decline begin. Thus throughout most of both periods beam prices were constantly changing, even though the changes were usually counter to the general level of prices. Under no competitive circumstances could the market prices of rails have remained so inflexible.

The prominence of inflexible prices is suggested by an analysis of 750 commodities in the United States Bureau of Labor Wholesale Price Index during the period from 1926 to 1933 inclusive. During this eight-year period there was an opportunity for 94 changes to occur in the average monthly prices of each commodity. For only 63 of these commodities, or less than 10 per cent of the total number, did the average price change each month. At the other extreme 14 commodities were absolutely rigid, experiencing no change in average monthly price throughout the entire eight years, and 77 more commodities changed prices less than five times during the period.

TABLE IO. FLEXIBLE AND INFLEXIBLE PRICES  
1926-1933 inclusive<sup>x</sup>

Number of Changes in Average Monthly Prices (94 possible changes)	Number of Commodities
0	14
1-4	77
5-8	76
9-13	82
14-21	96
22-35	88
36-60	86
61-87	85
88-93	83
94	63
	<u>750</u>

<sup>x</sup> *Industrial Prices and Their Relative Inflexibility.* Report by Gardiner C. Means to Secretary of Agriculture, 1935.

The prominence of the inflexible prices shown above is especially significant since the period includes a substantial part of the severe depression of 1929. The presence of privately regulated prices can ordinarily be detected more easily in depression periods, with a declining general level of prices. When the price level in general is fairly stable, the absence of changing prices might reflect a well-balanced production and consumption. During the periods when general prices are rising, privately regulated prices are also likely to rise, since producers are eager to take advantage of any higher prices they can get. But there is not an equal willingness to accept lower prices when the general price level is declining. In so far as producers have any regulatory power over prices for their goods, the tendency will be to resist price reductions, despite the fact that distinctly competitive prices are falling.

While prices may be inflexible, it does not follow that production will be inflexible likewise. One or the other can be rigid, but not both. The fact that sellers can control prices at which they will sell goods does not mean they can control the quantity which buyers will take at that price. With inflexible prices there may be sharp changes in the quantities of goods purchased and consequently in the quantities produced.

A recent illustration of this may be seen by comparison of production and prices in ten leading industries between 1929 and 1933. During this period there is a striking tendency for the greatest declines in production to occur in those industries with the most rigid prices. This is shown in Table II. For instance, agricultural implements or farm machinery prices fell only 15 per cent but production declined 80 per cent, while prices for agricultural commodities fell 63 per cent and production declined only 6 per cent. Prices for motor vehicles fell only 16 per cent and production declined 80 per cent, while with a 56 per cent fall in petroleum prices production fell only 20 per cent, according to the analysis of Mr. Means.

TABLE II. PRODUCTION AND PRICES, 1929-1933

Products	Per cent of Fall in Prices	Per cent of Fall in Production
Agricultural implements.....	15	80
Motor vehicles.....	16	80
Cement.....	18	65
Iron and steel.....	20	83
Auto tires.....	33	70
Textile products.....	45	30
Food products.....	49	14
Leather.....	50	20
Petroleum.....	56	20
Agricultural commodities.....	63	6

#### B. TYPES OF INFLEXIBLE PRICES

Viewed from the standpoint of inflexibility, prices fall into four fairly distinct groups which may be designated as customary, administered, dictated, and monopoly prices.

*Customary Prices.* For some goods the same price prevails for so long a period that it comes to be recognized by purchasers as the customary or "right" price. In this class will be found such goods and services as newspapers, shoe shines, soft drinks, haircuts, and hotel accommodations. With predictable changes in demand there may be two or more sets of customary prices, such as "season" and "off-season" rates at resort hotels. The prices which are dominated by custom are found more frequently among goods purchased by ultimate consumers than

with those purchased by business concerns, and are encountered more frequently with low-priced than with high-priced goods. Most goods with customary prices are purchased repetitively at rather short and often more or less regular intervals, as with magazines. Consumers are not irritated and do not change their buying habits with respect to sugar if its price is somewhat higher this week than last week, but frequent price changes for Coca-Cola, for instance, would cause irritation and disruption of buying habits. In some cases the resistance can be avoided by letting the charge remain the same and changing the quantity or quality furnished. Most customary prices do not persist indefinitely, but tradition exerts a powerful influence in maintaining the same price over extended periods of time.

*Administered Prices.* In some cases inflexible prices are the direct result of administrative decisions by individual producers. A prominent illustration occurs in the automobile industry. Policies followed in this industry prevent tradition determining the price of the product and each manufacturer announces his own price. It is rather difficult to imagine Henry Ford conferring with General Motors and Chrysler in determining the particular prices at which their respective cars will be offered for sale. Independent decisions are made, and the announced price holds for a more or less extended period of time. During that time there is no opportunity for bargaining on the part of the buyers in any part of the country except within the rather closely regulated limits of trade-in values for old cars. Buyers take the product or leave it, and the volume of production is adjusted to the quantity which can be sold at that price.

It is not essential for administered prices, however, that each seller shall determine his price independently of others. There may be an agreement or understanding among competing producers so long as some do not dominate the others. Cigarette prices of the "Big Four" move in almost perfect harmony, and one might well suspect a previous understanding among the manufacturers. The strength of each concern is such that no one of them can dominate the market and determine the price

at which the competing products will be sold. Despite advertising designed to convince consumers that each brand has distinctive qualities, a slight difference in price would cause a decided shift to the lower-priced brand. Under these circumstances it is doubtful if one competitor would risk his stake in the market by raising prices unless the others were known to be ready and willing to do likewise. Nor is it likely that one producer would invite a price war by reducing prices in the hope of expanding his market at the expense of his competitors. A mutually agreeable price is likely to be announced independently by the competitors, and this price prevails for a more or less extended period of time.

There is often the appearance of greater rigidity in administered prices than exists in reality. The most nearly flexible of such prices are those found in retail stores which have a policy of one-price-to-all-customers. There is no opportunity for customers to bargain individually. Their bargaining power is collective and expressed through refusal to buy. If at any time customers do not want to pay the announced price there is no trading. But the volume of trading at the announced price is likely to determine how long that price will continue. If a stock of goods is not moving as rapidly as was expected, a lower price is likely to be announced promptly, perhaps as some kind of "special" sale. If, however, the stock is moving more rapidly than was expected, a higher price may be announced. Customers who detect the increase will be given any one of several plausible explanations. The point is that some administratively determined prices are likely to be nearly as flexible as unregulated prices.

*Dictated Prices.* There is one basic distinction between administered and dictated prices. Administered prices are the result of either independent or cooperative action on the part of competitors, but dictated prices are imposed upon competitors. Different circumstances give rise to the dictatorial power. This may arise out of patent rights. The owner of a patent may lease to competitors the right to use it. An implied or expressed condition of the lease may be that com-

petitors are to maintain the same prices as the patent owner. Failure to meet this requirement is likely to result in the cancellation of the lease or the refusal to renew it. There is some reason to believe that fundamental patents in the refining of oil are used to dictate the price of gasoline in certain markets. Another source of dictatorial power is violence and threats of violence. This is not new. The Standard Oil and other trusts used it in their heyday. With the highly organized activities of racketeers and gangsters, more effective means exist of imposing prices upon competitors who would otherwise "chisel" or cut prices. The prices charged for cleaning and dyeing in some cities are a result of dictatorial power.

*Monopoly Prices.* With both administered and dictated prices there is no direct control over the quantity of production or trade for individual concerns. Each concern does as much business as possible at the established price. In so far as there is any control over production that control comes by way of the price. More or less goods will be furnished depending on whether more or less can be sold at the regulated price. But with a monopoly there is direct control over production or the volume of business. Through this control prices are regulated. While such prices tend to be inflexible, this is not their only characteristic which warrants emphasis. Consequently it will be advantageous to treat these prices separately.

## II. MONOPOLY PRICES

In considering monopoly prices it will be convenient to emphasize complete monopoly with a single seller. This represents the most extreme form but embodies the same principle which must be employed with partial monopolies.

### A. COMPLETE MONOPOLY

The fact that a monopoly can regulate prices for its own advantage often gives rise to an exaggerated impression of the extent to which the control can be exercised. There is a widespread belief that the monopoly price bears no relation to costs

of production but is rather the highest price that the monopoly can get. Ordinarily such is not the case.

Several factors, it will be recalled from a previous chapter, are likely to influence the monopolist's control. On the demand side the monopolist cannot compel persons to purchase his goods. While he can compel buyers to pay the price he designates, he cannot control the quantity they will buy at that price. His opportunities for control are quite different with an inelastic than with an elastic demand. Then, too, he must face the possibility that his prices may create ill-will of consumers and cause them actively to seek substitute products. This will further stimulate the ever-present possibility of substitutes coming forth and reducing the demand for his product. Finally, in some cases there is the danger of inviting government regulation or even public operation. On the supply side there are also several circumstances which influence the monopolist's power over prices. He may find himself in a position where his goods must be sold quickly if they are to be sold at all. In such cases his position is weaker than if goods had not been created. But even when he is in a position to control the quantity produced, his power over prices depends upon whether or not the facilities for production are already in his possession. He has considerably more power when he has a choice as to what the productive facilities shall be than after the facilities have been brought into existence. Once the capacity for production has been established, the overhead costs place a pressure on the monopolist and curb his power over prices. These three sets of circumstances on the supply side will be considered in examining the monopolist's power within the limits of demand.

*Quick Sale.* When goods have been produced and must be sold quickly, if at all, there is no relation between the market price and costs of production. The price will tend to be one which gives the monopolist the largest total receipts. Since the costs have been sunk and since the goods cannot be stored, the most advantageous course for the monopolist is to recover as much as possible of his total costs. He may sell the entire

quantity or sell a part and destroy the balance. How much of the entire amount he will be prompted to sell depends on the nature of the demand schedule. For example, if the monopolist had 20,000 units on his hands with the following demand

DEMAND SCHEDULE

Quantity	Price per Unit	Total Expenditure
10,000 units	\$8.00	\$80,000
12,000 units	6.50	78,000
15,000 units	5.00	75,000
18,000 units	4.00	72,000
20,000 units	3.00	60,000

schedule there would be an advantage in selling only 10,000 units and scrapping the remainder. The demand schedule, it will be noticed, is inelastic. Aggregate expenditures are smaller at lower than at higher prices. The 10,000 units can be sold at \$8, yielding a total income of \$80,000, which is more than any larger quantity would have yielded. If the entire stock were sold it would bring a price of only \$3 and yield only \$60,000.

The price which would here prevail under conditions of monopoly supply is quite different than it would be if the same quantity were distributed among numerous competitors. Under competition the entire quantity would have been sold and, on the basis of demand, at a price of only \$3 per unit, thus giving the competitors an aggregate return of \$60,000 as against \$80,000. This does not mean, of course, that competitors would have been any less anxious to charge prices which would give them the highest possible total receipts. But among competitors there is no incentive for any of them to withhold sufficient goods from the market to raise the price to the point where the maximum income would have been received. Since the sellers rival one another to dispose of their entire stock, the entire quantity can be sold only at a price of \$3, with the consequent smaller total income to the competitors as a group than was received by the monopolist.

Moreover, the quantity sold by the monopolist is different from what would have been if the demand had been elastic.

With an elastic demand the aggregate expenditure of customers would have been greater at lower than at higher prices. Consequently the monopolist's greatest total income would come by selling the entire quantity available. In this instance the price would tend to be the same as though the quantity had been distributed among competitors and sold on the basis of competitive prices.

*Current Production.* Monopoly prices, however, are not always those intended to yield the maximum total revenue. Before goods are produced the monopolist has some power to control his expenditures. He can decide how much of the existing capacity shall be put into operation. In making this decision both expected costs and revenues are likely to be compared. At times, however, very little is known as to the demand and the monopolist may merely set a selling price considerably above costs. If profitable business develops, price is maintained; otherwise it is reduced. It is reported, for example, that this was the manner in which the price of \$5 was determined for the original model of the Gillette razor. That price prevailed throughout virtually the entire life of the patent. Such a method of determining monopoly prices gives no assurance that the monopoly is being exploited to the limits of its possibilities. For this to be accomplished the probable income and probable costs of alternative quantities must be compared. Current production will then be adjusted to the point at which either maximum net profit or minimum net loss results.

(a) *Minimizing Losses.* An illustration of a monopoly price intended to minimize losses will be considered first. Suppose a market demand were as follows:

DEMAND SCHEDULE

Quantity	Price per Unit	Total Expenditure
10,000	\$3.50	\$35,000
20,000	2.75	55,000
30,000	2.50	75,000
36,000	2.25	81,000
40,000	1.50	60,000
44,000	1.00	44,000

On this basis the largest total expenditures will be \$81,000, which amount becomes the total receipts of the monopolist. Such expenditure occurs when 36,000 units are sold at \$2.25 each. But if receipts and costs were as shown below, the price would be fixed at \$2.50 instead of \$2.25. Comparing the total receipts as shown in Column 3 with the total costs of Column 4, there is no quantity of goods which could be sold at a profit.

1. Demand Price	2. Schedule Quantity	3. Total Receipts	4. Total Costs	5. Gain or Loss
\$3.50	10,000	\$35,000	\$48,000	\$-13,000
2.75	20,000	55,000	64,000	-9,000
2.50	30,000	75,000	80,000	-5,000
2.25	36,000	81,000	90,000	-9,000
1.50	40,000	60,000	100,000	-40,000
1.00	44,000	44,000	118,000	-74,000

The losses range from \$5000 to \$74,000, as shown in Column 5. The minimum loss of \$5000 occurs when only 30,000 units are produced. This quantity can be sold at \$2.50 per unit, yielding \$75,000 in revenue as against \$80,000 in cost. The resulting loss of \$5000 is the least that can be sustained with the existing demand and existing costs of production. For any smaller quantity the receipts will decline more rapidly than costs, thus giving a larger loss. On the other hand, for any larger quantity the income either increases less rapidly than costs, or actually declines as costs continue to increase. Here also greater losses would be sustained.

(b) *Maximizing Gains.* Suppose now that demand increased so that each of the several quantities could be sold at considerably higher prices, ranging from \$4 to \$12 as indicated below:

DEMAND SCHEDULE			
Quantity	Price per Unit	Total Expenditure	
10,000	\$12.00	\$120,000	
20,000	10.00	200,000	
30,000	7.00	210,000	
36,000	6.00	216,000	
40,000	5.00	200,000	
44,000	4.00	176,000	

If no simultaneous change occurred in costs, it would now be advantageous to curtail production still further despite the increased demand, and to raise the price to \$10. The increased demand makes it possible to produce profitably any of the quantities indicated in Column 2 below. A comparison of total receipts and total costs (Columns 3 and 4 respectively) shows that in all instances total costs are less than receipts.

1. Demand Schedule Price	2. Quantity	3. Total Receipts	4. Total Costs	5. Gain or Loss
\$12.00	10,000	\$120,000	\$48,000	\$72,000
10.00	20,000	200,000	64,000	136,000
7.00	30,000	210,000	80,000	130,000
6.00	36,000	216,000	90,000	126,000
5.00	40,000	200,000	100,000	100,000
4.00	44,000	176,000	118,000	58,000

The maximum possible gain is \$136,000. This occurs when only 20,000 units are produced. On the basis of demand that quantity can be sold at \$10 per unit, thus yielding total receipts of \$200,000. With costs of \$64,000 deducted, the maximum gain of \$136,000 is realized.

From these two illustrations it may be concluded that the monopoly price for current production tends to give either maximum gain or minimum loss. In either case the price is not fixed independently of production cost. While the advantage of a monopoly is usually viewed as the power to obtain maximum gains, the power to hold losses to a minimum when losses are unavoidable is scarcely less important to the prosperity of monopolies. In both respects the monopoly enterprise stands in sharp contrast to competitive concerns which are unable to control either their gains or their losses. However, the degree to which the monopolist will find curtailing production advantageous depends on whether the demand is elastic or inelastic.

*Long-Run Production.* The monopolist is in the strongest position to regulate price for his own advantage when there is an opportunity for him to adjust productive facilities to the demand. Competitive and monopoly enterprises alike have

their lowest per unit costs when their facilities are being operated at normal capacity. If production is pushed above or falls below this level total unit costs tend to rise. Consequently there is some incentive for the monopolist to have only such investment in plant and equipment as can be used advantageously. There are, however, circumstances under which the installation of greater capacity than will be utilized is advantageous. Equipment which gives the lowest operating costs may have greater capacity than is wanted, but if the lower operating costs more than offset the additional investment there is an advantage in creating capacity for production in excess of that which will be used. But this does not change the basis on which the expansion of capacity is determined. The tendency will be to adjust productive capacity so that the margin between total receipts and total costs will be greatest. This gives the maximum net gains.

The tendency of the monopolist to adjust capacity with a view to greatest total profits is modified slightly when the expansion of capacity at any time takes into account future requirements. When additional facilities for production are being provided, a larger increase in capacity than is wanted immediately may be possible with only a slightly larger investment than would be required for a smaller expansion of capacity, and at a considerably smaller investment than if the expansion occurred piecemeal. If an expanding market is anticipated, there may be a long-run advantage in sacrificing some immediate gains for the larger gains expected in the future, but this fact does not alter the dominating influence of maximum total profits on the expansion of productive facilities.

Over an extended period of time, monopoly prices, like competitive prices, may follow any one of three general courses: they may increase, decrease, or remain constant. Whereas competitive prices tend to follow the costs for the highest cost producer needed in the industry, monopoly prices follow the course calculated to be most advantageous to the monopolist. This may result in prices and costs moving in opposite directions. For instance, if the availability of substitute goods

reduces the demand for the monopoly product, the greatest monopoly advantage may come through lower prices and smaller profits than formerly. While the anthracite coal industry is not a complete monopoly, it appears to be a concrete illustration of substitute products forcing lower coal prices despite rising production costs. Thus while both demand and costs influence the course of monopoly prices, the long-run tendency of monopoly prices will be in the direction of greatest total profits.

Whether monopoly prices tend to be higher than competitive prices would have been is usually a matter of mere speculation. The opportunities for a monopoly to reduce costs are often greater than would exist under competition. The monopoly can organize its activities with less wasteful duplication of facilities and wasteful competitive practices than prevail with competition. Nevertheless, there is no reason to suspect that any of these economies are passed on to consumers unless the nature of the demand makes this course advantageous to the monopolist. If, in addition to lower costs, there is considerable opportunity for expansion in the market, the monopoly price may be lower than the competitive price would have been. But there is reason to suspect that prices are generally higher under monopoly than they would have been under competition.

In so far as monopoly prices are higher than the necessary costs of production, these prices have a depressing influence on competitive prices. Monopoly prices draw, at any given time, more purchasing power from the market for goods in general than would otherwise be required. This leaves a smaller amount of purchasing power available for goods whose prices are determined competitively, and thereby production and prices of these goods are held at a lower level than would otherwise be the case. But this does not mean that monopolies benefit consumers by increasing their general purchasing power since the influence of the lower prices for competitively produced goods is offset by that of the unnecessarily high prices for goods produced by monopolies.

### B. PARTIAL MONOPOLY

Thus far price tendencies have been considered for a monopoly in the strict sense of the term — a single seller. Such monopolies are usually based on secret processes or on government grants in the form of patents and copyrights. Exclusive franchises usually carry with them government regulation of rates, and will be considered in the following chapter. But in many cases monopoly is partial rather than complete. By partial monopoly is meant the existence of independent concerns in the industry which compete directly with the monopoly.

Direct competition does not alter the basis or the incentive for monopoly price. Whether there is complete or partial monopoly, and whether the monopoly is a single concern or a combined group, the regulation of prices must come through deliberately curtailing the quantity of goods offered for sale. To this end the monopoly may intimidate independent concerns. This involves both economic and legal dangers as has been previously noticed. In the absence of intimidation the curtailment of goods must come solely through the monopoly. In any event the incentive remains the same. Under circumstances requiring stocks of goods to be sold quickly if at all, the incentive is to obtain the largest total receipts. For goods currently produced the monopoly seeks to minimize its losses or maximize its profits, while long-run operations are directed to obtaining the largest total profits.

Direct competition, however, does alter the influence which the monopoly can exert on monopoly prices. This is illustrated most easily when an existing stock of goods must be sold quickly if at all. Suppose the quantity in existence and the demand for it were the same as those previously used to illustrate market price with complete monopoly, but that now 20 per cent of the entire 20,000 units in existence is in the hands of independent concerns with the monopoly controlling 80 per cent. In the following demand schedule it will be seen that the market price would be \$8 under complete monopoly, with 10,000 units offered for sale and the balance destroyed. What-

TABLE I2

Demand Schedule		Total Expenditure of Consumers	Monopoly Control 80%	
1	2	3	4	5
Quantity	Price		Independents' Share of Expenditures through Sale of 4000 Units	Share for Monopoly through Selling Balance of Aggregate Quantity Purchased
10,000 units	\$8.00	\$80,000	\$32,000	\$48,000
12,000 units	6.50	78,000	26,000	52,000
15,000 units	5.00	75,000	20,000	55,000
18,000 units	4.00	72,000	16,000	56,000
20,000 units	3.00	60,000	12,000	48,000

ever price the monopoly establishes will enable the independent concerns to dispose of their entire stock of goods. The amount they would receive at different selling prices is shown in Column 4. The balance of the consumers' expenditures would be received by the monopoly. Its largest receipts are obtained when the market price is \$4 with 18,000 units sold, yielding aggregate expenditures by consumers of \$72,000. Of this amount the independents received \$16,000 and the monopoly \$56,000. Because the monopoly lacked 20 per cent of complete control, the market price was kept considerably below the \$8 level to which it would have gone if the monopoly had had complete control. It will also be noticed that in raising prices from their competitive level of \$3 to a level of \$4, the monopoly increased its total receipts by \$8000 or about 17 per cent, whereas the \$4000 additional received by the independents was about 25 per cent more than they would have received under competitive prices. Thus a rather small quantity of goods in the hands of independent concerns exerted a powerful curb on the monopoly influence over prices, while with monopoly control the independents were in a position to benefit more proportionately than did the monopoly itself.

Most partial monopolies not only control prices until an exist-

ing stock of goods has been disposed of, but also exert their influence on prices for current production. Here the control of productive capacity is essential as a means of controlling actual production. How much production a monopoly must have under its jurisdiction in order to regulate prices depends upon how easily independent concerns can expand their operations, how many new concerns come into the field, and how many old plants, which do not ordinarily operate, can be re-opened under the influence of higher prices. Then, too, the level of costs for the monopoly as compared with those of independents plays a part in determining how effectively the monopoly can control production. If the monopoly costs are relatively low, a comparatively small increase in price may enable it to obtain considerably greater gain and yet the prices need not be sufficiently high to stimulate much expansion of production by the independents. In any event a partial as well as a complete monopoly is disturbed by substitutes and government interference.

### III. PRICE DISCRIMINATION

With competitive prices, the buyers in a market at any given time pay the same prices for the same thing, and sellers receive the same prices for the things they sell. But this is not necessarily the case when the terms of sale permit discrimination as between buyers. The means by which discrimination occurs are numerous, and only some illustrative types can be considered here.

*Cash and Credit.* In many cases seemingly uniform prices are in fact discriminatory. This is seen with retail stores, which sell merchandise at the same price whether that price is paid immediately or at some future time. Moreover, all buyers do not have a choice as to their method of payment. Some must pay cash and others may buy on credit. Here the seemingly uniform price does not apply to the same things. The cash customers receive only the merchandise, while the others receive merchandise plus credit accommodation. Thus the

cash customer gets less for his money than the credit customer. Such a situation is not a characteristic of competitive prices. For example, on the organized produce exchanges all transactions are fully settled at the end of the day. Any buyer needing credit accommodation makes separate banking arrangements and pays an additional price in the form of interest for the additional service. However, the fact that exchanges conduct their business on a cash basis does not mean that competitive trade might not prevail on a credit basis also. The only point of significance here is that the existence of the same price side by side for both cash and credit transactions indicates a type of discrimination which may occur with regulated but not with distinctly competitive prices.

*Quantity Discounts.* Differences in prices for different quantities of goods may also be a type of price discrimination. To the extent that differences in cost are involved there need be no discriminatory differences in prices. For instance, the distinction between a wholesale and a retail market is based mainly on the relative quantities of goods purchased. Wholesalers generally buy in larger quantities than retailers, while retailers in turn buy in larger quantities than ultimate consumers. In so far as the quantity in which goods are purchased affects costs, the difference in cost would tend to be reflected even in the competitive price for a commodity or service. But the quantity may be the excuse, rather than the reason, for different prices as between customers. At one time the National Biscuit Company granted chain-store companies quantity discounts based on the aggregate purchase of all their stores, but refused to grant cooperative associations of retail stores similar discounts on the same aggregate purchases by their members. A more recent controversy involving the same point occurred with the Goodyear Tire Company. Independent dealers alleged that the prices at which this company sold tires to Sears Roebuck constituted special favors rather than quantity discounts. A Federal Trade Commission investigation led to a finding that for a comparable volume of business a discrimination of 26 per cent in net sales price existed in favor

of Sears Roebuck. If by comparable volume of business the Commission means that Sears Roebuck paid 26 per cent less than an independent dealer pays for the same sized order at the same time, quite obviously the price is regulated on some other basis than quantity buying. Such practices were largely responsible for the Robinson-Patman anti-price discrimination law passed by Congress in 1935.

*Delivery.* One of the most fertile sources of price discrimination arises out of the arrangements for the physical delivery of goods from seller to buyer. The price as quoted by the seller may or may not include transportation charges to the destination of the goods.

(a) *Free Delivery.* In local retail trade free delivery is quite extensive. Delivery is free only in the sense that no additional charge is made for the delivery of the goods. Expressed differently, buyers pay for delivery whether they receive it or not. The costs are included in overhead and are distributed over all sales. This type of discrimination differs at least from that of cash and credit in that all buyers have the privilege of having their purchases delivered to them. But unless all buyers want delivery service and the cost of it is substantially the same in all cases, there is discrimination as between customers when the same price is charged to all. Usually in retail trade the extent of the discrimination is not large, although the same principle is employed in other lines of business and gives rise to important discriminations, as will be seen presently. Even in retail trade the elimination of delivery and credit discrimination constitute two of the foundation stones for many chain-store enterprises.

(b) *Basing Point.* More serious aspects of delivery arise with heavy and bulky goods which must be transported such distances that the freight becomes a substantial item of cost either to the buyer or the seller. In some cases the price quoted is that of the locality from which goods are shipped. These are strictly F.O.B. or free-on-board prices, and cover only the goods themselves, plus free delivery on board train or boat at a local shipping point. The purchaser pays the actual costs

of transporting the goods. But in some instances the F.O.B. price is not so much a selling price as a basing point price. When a seller has only one plant from which all goods are shipped the F.O.B. would be the actual selling price. With concerns having operations distributed among numerous plants in different localities, some one locality is often selected as a basing point. Prices are quoted as though all goods were shipped from that point even though they are not. In such cases the F.O.B. price becomes a basing point price.

A situation of this kind is found also in the automobile industry. Prices for new cars of any make are quoted as though they were shipped from a particular point such as Detroit. The price which the consumer pays often includes, beyond the car itself, the imaginary shipping charges of an assembled car from the basing point. Actually the assembled car may never have been shipped from any point. Parts in large quantities may have been shipped to a local assembly plant from which the car was driven under its own power. Shipment in this way averages much less per car than the customer is charged for the imaginary transportation of an assembled product. To whatever extent this prevails, buyers outside Detroit, or any other basing point, pay in reality higher prices for the car itself than those purchasing the product at the basing point.

A somewhat more extreme form of price discrimination through imaginary transportation occurred with the original Pittsburgh-Plus system of prices in the steel industry. That system was designed to prevent price cutting and worked quite successfully to that end. Pittsburgh became the basing point for the entire industry. The delivered price for steel in any locality outside Pittsburgh was equivalent to the Pittsburgh base price plus the freight from Pittsburgh to that locality. Thus the farther places were from the basing point, the higher were the delivered prices for steel products. The price thus established for any locality prevailed even when the steel was produced in the same locality in which it was sold. Suppose the F.O.B. price in Pittsburgh was \$30 a ton with a \$7 transportation cost to Bethlehem, Pennsylvania. A boiler-maker

in Bethlehem, buying from the mills there, paid \$37 a ton for his steel. If the local mill's costs were the same as those of the Pittsburgh mills, the boiler-maker was compelled to pay \$7 a ton to the mill for imaginary freight charges. In addition to preventing price cutting such a system also prevented buyers from deriving any advantage from being close to their source of supply. In retaliation buyers at times place their orders, not with local concerns, but with those located at the greatest distance from the point of delivery. If such fighting of the basing point system were extensive the arrangement would soon collapse.

When in 1934 there was occasion for the United States Steel Corporation to defend the Pittsburgh-Plus system of prices, it did so on the ground that these were not regulated prices but were an illustration of perfectly competitive prices. The Corporation argued that instead of forcing its Pittsburgh price on the industry, the demand for steel forced prices to the Pittsburgh-Plus level, the line of reasoning being, in brief, that Pittsburgh was the steel center of the country and outside mills did not have sufficient capacity to meet their local demands. Under these conditions, prices would tend to rise until they reached a point where it was profitable for the Pittsburgh mills to relieve the pressure. This occurred only when the local price of steel rose sufficiently high to meet the Pittsburgh mill price and also cover the transportation charges to the point of destination. Thus, it was argued, the Pittsburgh-Plus price became the natural market price under competition. The validity of the argument depended on the accuracy of the statement that mills outside Pittsburgh were unable to meet their local requirements without the assistance of Pittsburgh mills. To the extent that this was true, the argument was valid. But the fly in the ointment was that the Pittsburgh-Plus price prevailed even when outside mills had idle capacity. Under such conditions there was no competitive reason for the Pittsburgh-Plus price to prevail. The explanation for the adherence of mills throughout the country to the established price was that in part they feared the competition of the giant in the industry,

and in part the giant held a profit umbrella over them. When competition was not on a price basis, high-cost mills throughout the country could get profitable business so long as their costs did not exceed those of the Pittsburgh mill by more than the freight from Pittsburgh to their locality. For low-cost mills the imaginary freight ordinarily offered some additional profit.

The "perfection" of competition in the industry showed an amazing tendency to decline when the Federal Trade Commission ordered the United States Steel Corporation and its subsidiaries to cease and desist pricing products as of any other locality than the one of actual shipment. The only change which has actually occurred has been an increase in the number of basing points. With more basing points, such as Birmingham and Chicago, there is increased rivalry, and prices might well be expected to approach more closely the costs for the local mills in so far as they are able to meet the demand. For instance, when Chicago was added as a basing point the established mill price was \$2 a ton above that of the Pittsburgh mills, but the actual delivered price was \$4.80 less than the price would have been with the imaginary transportation from Pittsburgh.

When, however, there are multiple basing points, as has been the case in the cement industry, another type of price discrimination may arise. The highly standardized Portland cement, with its heavy shipping costs, is sold only on a delivered price basis. This practice enables producers to extend their marketing area further than would be possible with F.O.B. prices. Such prices would automatically establish a trading area for each mill. No mill would be able to sell beyond the point where its combined price plus transportation would be greater than that combination for some other mill. But when goods are sold on a delivered basis, the mill can extend its trading area by absorbing the transportation costs. This results in different net sales prices to the mills. Buyers within the trading area of a mill may pay not only for the cement but for its full cost of delivery. On these sales the mill nets a higher price than on

sales in localities outside its own trading area. Outside its area the mill absorbs the additional transportation, thus accepting less for its product than when sold to local buyers. At the time of a Federal Trade Commission investigation, the mills which were near Chicago were absorbing so much of the transportation costs for sales beyond their own trading area that their net realized price on all sales, including those in Chicago, was 22½ cents a barrel below the net price realized for Chicago shipments. In other words, by the use of delivered prices the mills were selling their cement at higher prices in their home territory than in territory outside their own trading area.

*Classes of Buyers and Goods.* For any general type of commodity or service buyers have unequal desires and unequal purchasing power, as noted in connection with the law of demand. This fact furnishes the basis for a type of discrimination sometimes known as class price. If all prospective buyers, regardless of their desires and incomes, compete for the available quantity of any kind of goods, there tends to be a uniform price for those goods in the market at any time. Moreover, this uniform price tends to be the least sellers are willing to accept for the aggregate quantity of goods which buyers will take at that price. Those buyers who would pay more rather than go without the goods are enabled to make their purchases at lower prices because they do not take off the market all the goods which sellers stand ready to sell if necessary at lower prices. The rivalry of the sellers to dispose of their goods forces the price down to the level of those purchasers who are least willing or able to buy them. Consequently if the prospective buyers can be separated into such classes that sellers do not compete directly in meeting the demand, or if goods which are either the same or substantially so can be made to appear different, there is an opportunity to charge some buyers more than others for virtually the same goods.

Class price is not peculiar to any line of business. Discrimination of this kind is well known in the medical and legal professions. Wealthy patients and clients are charged more than

poorer ones, even when the quality of the service is identical. In some cases the wealthy are conscious of it and proud of their ability to pay higher prices; in other cases the higher prices are paid because of belief that higher prices mean better quality. If the patients and clients had any basis for comparison or could get bids they would probably find the same quality of service available at different prices. Retail establishments with a main and a basement store not infrequently sell identical merchandise at the two places with a lower price in the basement than in the main store. If the buyers in general "shopped" between these two places and could judge merchandise on the basis of its qualities these differences in prices would be impossible. The differences in price of a de luxe edition of a book and a trade edition are much greater than the differences in cost would justify. With some goods superficial differences in color, design, or packing or wrapping may serve to make the same thing appear different and sell at a different price. Mention has already been made of the use of brand and trade names as a means of charging more for the same goods that could be purchased at considerably lower prices if they could be recognized without the distinguishing mark or names. Shoes, clothing, mattresses, gasoline, and oil are only a few of the many products to which class price is applied on this basis.

*Special Services.* When goods are not of a standardized character, or when special services are performed in furnishing even standardized goods, there are opportunities for price discriminations which are not based on differences in cost of production. Contracts for goods at times provide specifications which only one producer can meet. This occurs not only with contracts of local, state, and federal governments but also with contracts of private buyers. In some cases these specifications are drawn deliberately to exclude all but one concern which is known in advance to be the only one capable of meeting all the requirements. The specifications which exclude competitors may not be essential to obtaining either first-class products or service, but enables the single qualifying bidder to quote a higher price than if he had to face real competition for the contract. At

times emergencies develop and customers place "rush orders." When this occurs sellers may be in a position to charge a premium for the special consideration given a particular order. The premium may be intended merely to discourage such business or to cover the additional costs involved in disrupting the planned production of the concern. But the higher price may be charged because the seller knows the pressing need of the buyer, his willingness to pay a higher price, and his inability to be accommodated elsewhere.

### QUESTIONS

1. "If prices of individual goods are to be flexible they must conform to changes in the general price level." Does this statement indicate the essential characteristic of flexible prices? Explain.
2. "It is impossible for both prices and production to be inflexible." What does the statement mean, and is it valid?
3. With what types of goods are customary prices most likely to be found?
4. May administered prices also be customary prices? If not, why not? If so, what is the purpose of distinguishing them?
5. What is meant by the statement that "administered prices often appear to be more rigid than they are in reality"?
6. Under what circumstances do dictated prices arise?
7. How do dictated prices differ from monopoly prices?
8. "The monopolist seeks the highest price he can get." Is this statement valid?
9. What is meant by the statement that "conditions of demand operate to curb the power of the monopolist"?
10. "The prices of goods offered for quick sale are not determined in the same way when they are offered by a monopolist as when offered by competitors." Explain how, if at all, selling prices would differ in the two cases.
11. How do monopoly prices for quick sale differ from those charged for goods being produced currently?
12. "Cost of production plays no part in determining monopoly prices." Evaluate.
13. "Those goods for which there is an inelastic demand offer a particularly fertile field for the monopolist." Explain.
14. How, if at all, do monopoly prices for current production differ from those for long-run production?
15. "Monopoly prices are higher than competitive prices." Evaluate.

16. What is meant by the statement that "over an extended period of time, monopoly prices, like competitive prices, may follow any one of three general courses"?
17. "A partial monopoly necessarily benefits the independent concerns in the field." Point out the validity or falsity of this statement.
18. "Quantity discounts are economically sound." Do you agree? Give reasons.
19. Explain how the delivery of goods opens the way for price discriminations.
20. It is sometimes said that "class price cannot be a competitive price." Evaluate the statement, pointing out the meaning of class price.

## CHAPTER XX

### GOVERNMENTALLY REGULATED PRICES

IN AN earlier chapter the regulation of prices by the government was considered as one aspect of business regulation. In this chapter interest centers in the way prices or rates are determined for those enterprises known as public utilities.

Public utilities are a particular type of private business. Presumably the justification for any business is that it serves the public. But this is not adequate legal justification for designating enterprises or industries as public utilities. Just what the requirements are in this direction has never been satisfactorily determined. The statements of courts usually run to the effect that property becomes "clothed with a public interest when used in a manner to make it of public consequence, and affect the community at large."<sup>1</sup> On this basis some enterprises are public utilities at the time they originate. The late Chief Justice Taft observed that when enterprises are carried on under authority of a public grant or privilege, there is a duty imposed on them to serve any who may apply for their service, as with common carriers which have been granted franchises. Other enterprises which were not originally public utilities may develop into this type of private business. In deciding that the state of Illinois might regulate the maximum charge for the bulk storage of grain in that state, the United States Supreme Court said that when one devoted his property "to a use in which the public has an interest, he, in effect, grants the public an interest in that use, and must submit to be controlled by the public for the common good, to the extent of the interest he has thus created. He may withdraw his grants by discontinuing the use; but so long as he maintains these, he must admit to the control."<sup>2</sup>

<sup>1</sup> *Munn vs. Illinois.*

<sup>2</sup> *Ibid.*

There are usually three steps by which a line of business evolves into the classification of a public utility. The first is that of public discussion with agitation for regulation of the business. The second is the declaration by legislative act that the business is so affected with a public interest as to warrant special regulation. But this declaration is not final. The Supreme Court has said: "... mere declaration by a legislature that a business is affected with a public interest is not conclusive of the question whether its attempted regulation on that ground is justified. The circumstances of its alleged change from the status of private business and its freedom from regulation into one in which the public has come to have an interest are always a subject of judicial inquiry."<sup>1</sup> Since most legislative decisions of this kind are contested on constitutional grounds, the Court decision is the final step in the process by which a private enterprise becomes a public utility.

While there are many ways in which private enterprises can be regulated for the protection of the public, the fixing of prices by the government occurs mainly when competition ceases to protect consumers or when they can be served more efficiently and economically by a monopoly. A water company which controlled the only watershed in an area would have no direct competition, and would be in a position to charge exorbitant prices in view of the essential nature of the product. Rivalry in rendering telephone service reaches a point where service to the public is diminished rather than increased through further competition of enterprises in this line of business. Under these circumstances the monopoly may be recognized and rates governmentally regulated.

When the government undertakes to fix prices or rates there are numerous circumstances and conditions which must be taken into account. Each line of business falling under the general designation of public utility has some peculiarities of its own. No attempt will be made to consider these. Attention will center on three broad aspects of general significance.

<sup>1</sup> *Wolff Packing Company vs. Court of Industrial Relations.*

These are: ascertaining a fair value of the property, determining a fair return on that value, and fixing prices or rates which will provide for such a return.

### I. DETERMINATION OF FAIR VALUE

Despite nearly forty years of legal and economic controversy, no rule has developed for the valuation of public utility property. Furthermore it is unlikely, for reasons which appear later, that any rule ever will be established. In addition to the economic difficulties inherent in the task, the courts have added others by setting forth contradictory and irreconcilable elements which must be taken into account in the valuation of utilities for rate-making purposes. In a famous case the Supreme Court said: "...in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stocks, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, the sum required to meet operating expenses, are all matters for consideration and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating a fair return of that which is employed for public convenience."<sup>1</sup> Even if these elements were not contradictory and irreconcilable, there still remains the problem of how much weight or importance is to be attached to each of these factors. The only guide which the courts have thus far given is that such weight must be given to each element as will be "just and right in each case." In the final analysis, therefore, the courts alone can decide a fair valuation, for only the courts have the power to decide whether or not the weights given to these factors by a regulatory body, such as the Interstate Commerce Commission, are just and right.

<sup>1</sup> *Smyth vs. Ames.*

**A. COST BASIS OF VALUATION**

In actual practice the courts have placed particular emphasis on the element of cost in the determination of fair valuation. But if only costs were considered, there would still be endless confusion. Cost itself, as already observed, depends upon the purpose for which it is calculated. Here one purpose is to determine the investment which has already been made in the enterprise. Another is to determine what investment would be needed to replace the facilities. For the former purpose original cost is important, while for the latter reproduction cost is important. These costs will be considered in turn.

*Original Cost.* It might seem that the original cost would be a simple method of determining the valuation of a utility. But such is not the case. While it is perhaps the easiest method, there are more serious difficulties than appear on the surface. In the first place, the actual records of cost may not be available. If they are available they may not furnish the necessary information. Courts have held that the actual cost of all property acquired by a concern is not necessarily the cost to be accepted. Only the prudent cost can be included. The reasonableness of the costs originally incurred can be determined more easily for some types of property than for others. A check is comparatively easy with such property as buildings and equipment but not with prices paid for land, rights of way, good-will, franchises, etc. Manipulation is particularly easy with such intangibles as rights of way. Within wide limits "insiders" alone know how much greater the cost of necessary property was than the cost would have been if there had not been manipulation. Moreover, the property to be included must be used and useful in the conduct of the business. If through miscalculation or for other reasons a concern owns property which it does not use and which is not serviceable in conducting the business, such property cannot be included in the valuation for rate-making purposes.

But even if the cost of the original property has been ascertained, this is not all that must be determined. Consideration must be given to such costs as have been incurred for im-

provements and betterments since the original property was acquired. Consequently the original cost is usually interpreted to mean original-cost-to-date, or historical cost, as it is sometimes called. Here the thorny problem of depreciation and obsolescence is likely to arise. If a company has made adequate provision for these before declaring dividends, then any additional investment spent prudently in improving and expanding the enterprise would be included in determining the original cost of the entire property. But stockholders may consume their property by taking larger dividends than would be justified with adequate provision for depreciation. If this has occurred and further investment is needed to replace depleted property, such as rolling stock of railroads, there is no justification for adding the entire new investment to the original investment in determining the cost of property to date. But there remains the problem of deciding how much of the later investments represent an increase in the value of property on which the enterprise is legally entitled to a return.

*Reproduction Cost.* While the original cost to date is a measure of the investment in an enterprise, it is not a satisfactory measure of the value of the property when substantial changes occur in the general price level. Since the original cost of the property remains unchanged with either rising or falling price level, the owners suffer when the level rises and benefit when it falls. The same rate of return yields less purchasing power to the owners when prices in general rise and more purchasing power when price level falls. On the other hand, when property is valued on the basis of its original cost, consumers of service benefit by rising and suffer by falling prices. With a rising price level the return on investment included in the charge for service is only a return on the relatively low valuation of the property, but when the price level declines the consumers must pay for a return on an inflated valuation of the property.

The influence of price level changes on the valuation of property has been largely responsible for the insistence of courts that consideration be given to reproduction cost. Here

some additional difficulties develop. In the first place, the courts have not indicated how closely valuations for purposes of rate-making are to be adjusted to changes in the general level of prices. In fact, two decisions of the Supreme Court increase the uncertainty. One of them ordered a reduction in the 1933 valuation of a railroad for purposes of taxation because "late in 1929 there occurred a great collapse of values of all classes of property."<sup>1</sup> In the same year, 1933, the Maryland Public Service Commission ordered a reduction in telephone rates on the ground that lower rates were sufficient for a fair return on the greatly reduced values of property. But in passing upon this reduction in rates the same Court said, "... it would not only be unfair but impracticable to adjust the value and the consequent rate of return to sudden fluctuations in the price level."<sup>2</sup> Since substantially the same change in the general price level justified a reduction in valuation for purposes of taxation but did not justify a reduction in valuation for rate-making purposes, one may well wonder how long a "great collapse" in the price level must continue before it ceases to be "sudden" for purposes of rate-making. Moreover, one may well wonder whether the court would require the same period of time when prices in general are increasing as when they are decreasing.

In any event, there are two different bases on which reproduction costs may be determined. The cost may be that of duplicating or reproducing the identical plant and equipment which the enterprise already possesses, or may be that of providing substitute plant and equipment for performing the same service. In the former case the cost is that of duplicating the property, as against the cost of duplicating the service in the latter case.

(a) *Reproduction of Property.* The basis approved by the Supreme Court is that of reproducing the property. In deciding a case involving the Indianapolis Water Company the Court said, "There is to be ascertained the value of the plant

<sup>1</sup> *Great Northern Railway vs. Weeks, State Tax Commissioner, et al.*

<sup>2</sup> *West vs. Chesapeake and Potomac Telephone Company.*

used to give the service and not the estimated cost of a different plant." Even if the reproduction of existing property were an economically sound method of valuation, insurmountable difficulties arise in applying this method. Only on the assumption of highly fictitious and imaginary conditions can the cost of such reproduction be estimated. Difficulties arise over both the items to be included and the valuation to be placed upon them.

Controversy over what items should be considered in calculating reproduction cost centers around such intangibles as good-will, franchises, going value, etc. Since only property used and useful in the business can be considered, there is no question concerning items such as land, buildings, and physical equipment. Franchise values may be included provided sums have actually been spent in acquiring them. But the courts have consistently eliminated good-will as an item to be considered, although going value must be taken into account. In view of the fact that going value and good-will are often merely different names for the same thing, there is uncertainty as to the admissibility of the item.

More important controversy ordinarily centers around the valuation to be placed on the items. Here difficulty arises with both tangible property and intangible rights. For instance, the existing equipment may be obsolete and the cost of reproducing it would be greatly in excess of the cost for the more modern equipment. Consequently, strict adherence to the reproduction cost basis places a premium on obsolete equipment. This imaginary process of valuation also is likely to inflate some costs even when the price level is declining. A central heating plant may have laid its pipe lines when a community was in process of development and before permanent streets and pavements were laid. If the pipes had to be laid now the cost of doing so would be much greater than the original cost. And yet it is this replacement cost which must be followed if valuation is to be based on the cost of reproducing the existing facilities. Much the same situation exists with franchises, rights of way, and other intangibles.

An electric company may have obtained originally the necessary rights of way for its lines at a cost of a few hundred thousand dollars. If the new contracts had to be negotiated at the present time, millions might be required to obtain the same rights.

(b) *Reproduction of Service.* Despite the fact that the cost of reproducing the service of a public utility has not received the blessing of the Supreme Court as a method of valuation, it is not without merit under some circumstances. In determining the valuation of property which has become obsolete, the cost of duplicating facilities to produce the same service is more important than is the cost of duplicating the same property. In the absence of regulation, the value of property which is out of date is determined by neither its original nor its replacement cost. Rather the value of the old equipment is adjusted to the cost of obtaining new and modern equipment which will perform the same service. As soon as a new model car comes on the market, the values of all previous models automatically decline. Similarly the second-hand value of movable equipment used by business concerns depreciates. Even in the case of immovable property such as buildings, if new and lower cost methods of construction develop, the value of existing buildings is adjusted to the value of new and more modern ones. Determination of the cost of reproducing a service also has its difficulties. Experience indicates that there are often wide differences of opinion as to the best means of duplicating a service. Consequently, even if the courts looked with favor on this method of valuation, the variations in engineering judgment open the way for fully as much legal controversy as occurs when the present value of existing property is used.

#### B. BARGAINING BASIS OF VALUATION

*Reasons for Bargaining.* Economic and legal difficulties combine to make the customary methods of valuation highly unsatisfactory. These methods are expensive, furnish no permanent foundation for rate-making, and the results are conflicting.

(a) *Expense.* Large amounts of both time and money are required in estimating the valuation of public utilities. The expense includes not only the cost of appraisals but also the litigation involved. Perhaps the outstanding case is that of the New York Telephone Company, which is reported to have spent about \$5,000,000 for appraisal of its property in connection with a single valuation proceeding. In addition to this was the cost incurred by the state. The contest in this case lasted about eleven years and had not even then been appealed to the Supreme Court. In Philadelphia, a contest between the city and a lighting company resulted in a \$400,000 appraisal cost to the company and about three years were required for the investigation. The costliness of investigations and litigation is especially serious for most state commissions charged with fixing rates for the service rendered by utilities. Official inquiries conducted in Pennsylvania and New York have shown that commissions and municipalities alike are deterred in starting any actions which would involve costly valuation proceedings. This is ordinarily advantageous to the utilities. Most commissions are almost compelled, by their limited funds, to rely on the book costs and company statements in determining the valuations of utilities, neither of which is likely to furnish necessary information for valuation purposes.

Furthermore, the expenses incurred for valuation are repetitive. Technical improvements on the one hand, and changes in the market condition on the other, force alterations in valuations from time to time. The Tennessee Railroad Commission contends that any valuation "as of a particular time would not of necessity be true one year hence or even six months hence." A former member of a New York Commission expresses the view that even with a stable general level of prices, valuations might become obsolete within five or six years.

(b) *Conflicting Results.* After large and repetitive expenses have been incurred no satisfactory foundation has been established for purposes of rate-making. The fantastic methods by which valuations are now made lead to highly conflicting

results. An estimate for the New York Telephone Company ranged from \$367,000,000 to \$615,000,000; the lowest figure was the majority estimate of the New York Commission on Revision, while the highest was that of appraisers employed by the Telephone Company. Estimates for the Ohio Bell Telephone Company ran from \$104,000,000 to \$157,000,000. With the Union Electric Light and Power Company (St. Louis) the estimates of original cost ran from \$44,000,000 to \$66,000,000, those for reproduction, from \$52,000,000 to \$73,000,000, and the city of St. Louis contended that \$40,000,000 was a fair valuation for rate-making purposes.

*Use of Bargaining.* After large and repetitive expenses are incurred in obtaining widely different valuations, there is no occasion to wonder that attention is turned to bargaining, which is almost unavoidable after the valuation and might, therefore, well be used beforehand to avoid expense. Few persons in a position to know the facts would publicly admit that this basis is actually used to any large extent. But if the facts were known, this method would probably be found to be the one most widely used. At least the situation has reached a point where prominent members of commissions have gone on record against any method of valuation which requires elaborate proceedings and court reviews. In New York, California, Wisconsin, and Alabama, Commission spokesmen have urged the desirability of negotiations as preferable to formal proceedings.

Bargaining as a basis for valuation is not in itself an occasion for alarm, but the probable conditions under which it occurs may well justify doubt as to the desirability of the method. If commissions were equipped with facilities for adequate independent investigation and, for litigation, if necessary, the bargaining basis would probably yield results as nearly satisfactory as any method of valuation could provide. But most commissions do not have the needed facilities and are therefore not in a position of equal bargaining strength with the utilities. Under these circumstances the bargaining method fails to protect the public.

**C. ELIMINATION OF VALUATION**

Just as the bargaining basis is a logical outcome of an attempt to accomplish the impossible on a cost basis, so the bargaining basis may lead to the elimination of valuation for rate-making purposes. The proposals by which legally elaborate and economically meaningless valuation procedure would be avoided run the gamut from the elimination of government regulation of rates to the substitution of government ownership for private ownership of the utilities. Professor Cabot of Harvard University argues that utility services are furnished under conditions which are predominately competitive in character and that the self-interest of management would prompt it to reduce rates as a means of increased profits through greater consumption of the service. Recent disclosures of practices by public utilities can scarcely be said to justify such confidence in competition and self-interest for the protection of consumers. Mr. Eastman, at one time Federal Coordinator of Railroads, has expressed the view that the difficulties of railroad valuation can be met only by government ownership where legal technicalities of property rights will not arise. There is no reason to believe that the insuperable difficulties are peculiar to railroads.

**II. AGGREGATE RETURN****A. ITEMS INCLUDED**

In fixing the rates which public utilities are permitted to charge for their services, regulatory bodies must give consideration to the total revenue or income required for the rendering of service. How much total revenue utilities are entitled to receive depends in part on what the revenue is intended to cover. For example, under the Transportation Act of 1920 the Interstate Commerce Commission was required to fix such rates for service as would yield a fair return on the aggregate value of a carrier's property held for and used in the service of transportation. The fixing of rates to provide a "fair return on a fair value" is the basis most widely employed

by state regulatory bodies. In contrast to this is the provision of the Emergency Transportation Act of 1933, in which emphasis shifted from aggregate revenue sufficient to yield a fair return on a fair value of the property to income sufficient for the carriers to render adequate and efficient transportation with honest, economical, and efficient management.

This difference in emphasis not only affects the amount of total revenue to which a utility may be legally entitled, but also reflects two noteworthy tendencies in the process of regulating service rates. First, the shift reflects a frank recognition that under certain business conditions a regulatory body is helpless to provide rates for service which will yield adequate revenue to the utility. This point will be illustrated in another connection. Second, the emphasis on the cost of honest, economical, and efficient service gives regulatory bodies more control and supervision over the manner in which utilities are conducted. Operating expenses, depreciation, and the rate of return on investment are all matters which must be supervised if the utility is to receive only a reasonable return for its services.

*Operating Expenses.* The necessity for regulation of operating expenses was recognized many years ago by the Supreme Court. In a decision involving the Chicago and Grand Trunk Railroad, the Court said, "While the protection of vested rights of property is a supreme duty of the courts, it has not come to this, that the legislative power rests subservient to the discretion of any railroad corporation which may, by exorbitant and unreasonable salaries, or in some other improper way, transfer its earnings into what it is pleased to call 'operating expenses.'"<sup>1</sup> In 1922, a decision of the Court reversed its position when a Missouri commission challenged the propriety of a 4½ per cent service charge imposed on an operating company by the American Telephone and Telegraph Company.<sup>2</sup> In 1931 the Court again reversed its position and accepted the earlier view in allowing an Illinois Commission to inquire into

<sup>1</sup> *Chicago and Grand Trunk R.R. Co. vs. Wellman.*

<sup>2</sup> *Missouri ex rel. S. W. Bell Telephone Co. vs. Public Service Commission.*

the reasonableness of a service charge imposed on an Illinois subsidiary of the American Telephone and Telegraph Company.<sup>1</sup>

*Depreciation.* Scarcely less important than the control of operating expenses, but more difficult, is the regulation of depreciation. This item is merely a type of valuation. Presumably depreciation is intended to measure the amount of property consumed in the process of operation. To determine this amount various methods of accounting are used, and some lead to the same result if used throughout the entire life of the property. But in most cases methods are changed from time to time so that depreciation allowances are subject to wide manipulation. By merely changing the method of computation, the Union Traction Company<sup>2</sup> increased its depreciation charge from about \$14,000 to \$175,000. Annual charges for depreciation are estimated to run from 3 per cent to 20 per cent of operating expenses depending upon the accounting method used. At this point the Supreme Court has again contributed to increased confusion by insisting that depreciation be based on reproduction rather than actual cost. In 1930 the Supreme Court held that a Maryland Commission erred in basing its allowance for annual depreciation on actual cost. In holding that such an allowance was insufficient to maintain the level of efficiency, the Court said, "It is the settled rule of this court that the rate base is present value, and it would be wholly illogical to adopt a different rule for depreciation." It would seem, therefore, that all the complexities of valuation may likewise arise in determining the operating costs so far as depreciation is concerned.

*Rate of Return.* In deciding what constitutes a fair return on the investment, various elements must be taken into account. In a water company case, the Supreme Court held that a utility was entitled "to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other

<sup>1</sup> *Smith vs. Illinois Bell Telephone Company.*

<sup>2</sup> One of the concerns underlying the Philadelphia Rapid Transit Company.

business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional rights to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally.”<sup>1</sup>

Here again there is a problem of determining the relative importance of various, and to some extent impossible, requirements. For instance, one may wonder what unregulated enterprises have “corresponding risks and uncertainties” which might be used as a standard for regulated enterprises. One of the characteristics of most public utilities is that they are not exposed to numerous risks which surround unregulated enterprises. In the first place, the utilities are furnishing essential services, otherwise such enterprises would not ordinarily find themselves in the class of utilities. Risks arising from fluctuations in demand are noticeably less with necessities than with other types of goods. In the second place, utilities are protected extensively from direct competition, hence their risks are further reduced. Then, too, the regulation of utility practices tends to curtail some risks which have full play with unregulated enterprises.

In any event, it is by no means clear that regulatory bodies have actually exercised independent judgment in deciding upon a reasonable rate of return in each case. An analysis by Nelson L. Smith covering 719 comparable cases decided by either commissions or courts between 1915 and 1925 indicates an extremely pronounced tendency for a 7 per cent or an 8 per cent return.<sup>2</sup> Despite the changes in general price level

<sup>1</sup> *Bluefield Water Works and Improvement Co. vs. Public Service Commission.*

<sup>2</sup> See Mosher and Crawford, *Public Utility Regulation*, pp. 226-27. Harper and Brothers.

during this period, the 7 per cent return prevailed widely up to 1920 and the 8 per cent return thereafter. The striking uniformity suggests that precedent plays a large part in the determination of the rate of return. Apparently a rate which has applied in one case and was, perhaps, sustained by a court is then applied to other cases more or less automatically.

#### B. REASONABLE RATE OF RETURN

Much controversy centers around what is a reasonable rate of return for public utilities. The elements which determine interest rates generally will be considered in a later chapter. At present it is sufficient to notice that merely classifying enterprises as utilities does not make them uniform with respect to the conditions under which investments are required. It is the belief of some persons that the fundamental test of a reasonable rate is how much must be paid by the utility to obtain such additional investment as the enterprise may need from time to time. Regardless of what the valuation of a concern may be, if interest rates in general rise it will have to pay higher rates for additional funds, and if there is a general decline the utility along with other enterprises can obtain funds at lower rates. Whatever rate the market sets for additional investment would then be taken as the reasonable rate. If all utilities could obtain additional funds on the same terms, this method of determining the rate of return would be highly satisfactory, for there are always some enterprises seeking additional funds. Consequently it would be possible to determine at almost any time the prevailing market rate for utility investment. Utilities, however, cannot all get the additional funds they require on the same terms, so that the rate which would be reasonable for one utility would not necessarily be reasonable for another.

Whether any particular rate, say 7 or 8 per cent, which a utility is receiving, and which might appear to be in line with market conditions, is proved actually reasonable by this test depends partly on the valuation to which this rate applies. Enterprises with the same nominal rate may have widely

different rates in reality. With all sorts of imaginary conditions assumed in the valuation of property, some valuations are more liberal, or perhaps extravagant, than others; consequently a 7 per cent return on a conservative valuation gives a smaller aggregate return to investors than the same rate on a liberal valuation. The situation is the same as that encountered in the taxation of real estate. A high or low tax rate is meaningless unless one knows the basis for determining the value of property to which the rate applies. If property is assessed at only 20 per cent of its value, a much higher tax rate is needed for the same income to the government as would be furnished by a lower rate applied to property assessed at 100 per cent of its value.

When there are different classes of investors, still another aspect of valuation must be taken into account before the reasonableness of any rate of return can be determined. The customary procedure is to provide a blanket rate of return which applies to the entire value of the property. If the valuation or investment used as a base is \$1,000,000 and a flat 8 per cent return is provided, then \$80,000 is the amount which may be property included in the aggregate revenue of the company to compensate investors. But suppose \$500,000 or half the property was furnished by bondholders who were receiving a fixed return of 5 per cent on their investment; \$300,000 was furnished by preferred stock carrying a 6 per cent dividend, and the balance of \$200,000 was furnished by the sale of common stock. Out of the entire \$80,000 provided for investors, the bondholders receive \$25,000 and the preferred stockholders \$12,000. Even though they furnished 80 per cent of the investment their combined return is only \$37,000 as against \$43,000 for the holders of common stock through which only a fifth of the investment was obtained. The common shareholders thus receive a return of about 26 per cent on their investment, although the return on the entire investment in the enterprise is only 8 per cent. Even a return of 26 per cent is very modest by comparison with the returns which manipulation makes possible in some cases. The point to be noted is

that when investors are in different classes a seemingly reasonable return on the entire investment furnishes excessive returns to some and only moderate returns to other classes of investors.

The justification sometimes advanced for large returns to stockholders is that it stimulates efficient management. Just how a larger return to stockholders will improve management of a utility is none too clear in most cases. Where the owners also manage the enterprise the connection is not difficult to see. But the separation between investors and management is notorious with public utilities. In most utilities management contributes a negligible part of the investment, and looks for its gains in directions which are likely to increase operating expenses, such as salary and bonuses. Consequently if high rates of return to shareholders are intended to stimulate efficient management, the shareholders are usually receiving payments which should go to management. If the common stock is widely distributed, the high rates of return are shared by numerous small investors who know nothing about management, have no interest in it, and can do nothing about dislodging unsatisfactory management unless some one takes the initiative and bears the expense of organizing opposition. If the common stock is not widely distributed, it is likely to be held largely by a holding company and the benefits derived by the investors in it. Moreover, the efficiency of management does not necessarily benefit the public. This is recognized by the City of Washington, whose contract with an electric light and power company provides that dividends may be increased as the rates for electricity are lowered. Arrangements of this kind may stimulate more efficient management, since both consumers and investors exert pressure for economies by which they mutually benefit.

### III. DETERMINATION OF SERVICE RATES

After determining the necessary aggregate revenue for either a "fair return on a fair value" of the property or for honest, economical, and efficient operation of a utility, there is the fur-

ther task of determining the particular service rates by which the aggregate revenue can be obtained. In determining these rates consideration is given to the cost of serving different types of customers and to the benefit of the service of the customers.

#### A. COST OF SERVICE

The cost of rendering particular services governs the lower limit that can be charged for the service. The limits determined by expediency are, however, somewhat different from those which are set by compulsion of law. The lower limit dictated by expediency is likely to be considerably lower than that which a utility can be compelled to charge through the edict of a governmental agency.

*Expediency.* In rendering service there are some costs which can be assigned to each customer or class of customers, and other costs which cannot be so assigned. In the case of metered service, such as water, gas, and electricity, there is a separate cost incurred for the installation of each meter. The actual cost may be somewhat more for one installation than for another, but for a given group or class of customers the average figure represents fairly well the "out-of-pocket" expense incurred for each installation. The situation is different with other costs, such as those for supervision and maintenance. These costs apply to the entire volume of service rendered and cannot be allocated to any particular part of that service except on an arbitrary basis.

These direct "out-of-pocket" costs are particularly important in the determination of rates, for they constitute the lower limit below which rates do not tend to go. When a railroad runs a one-day excursion between two points, there are certain costs which can be definitely assigned to the trip because they would not be incurred if the run were not made. These costs would include fuel and wages of the train crew. But no additional signalmen would be required and there would be no appreciable wear and tear on the roadbed. Such items of cost as are necessary for any train service cannot be attributed to this particular trip. If, then, the cost assignable to the trip is

distributed among the estimated number of passengers, the pro rata cost constitutes the lowest fare which the road could charge with expectation of recovering those costs made necessary by the run.

*Compulsion.* While the out-of-pocket costs tend to constitute the lower limit for rates, a utility cannot be compelled to accept business at rates which barely cover these costs. In a case involving the rates set by the State of North Dakota for the transportation of lignite coal within the state, the Supreme Court held that in fixing rates at which a utility must render service the entire cost of handling any class of that service is to be taken into account. The costs which exclusively pertain to a given class of traffic must be assigned fully to that class, and the other expenses must be fairly apportioned. In practice, however, utilities often voluntarily accept lower rates for some classes of service than regulatory bodies could impose upon them for that class. Expediency dictates that when business cannot be secured at higher rates, a charge which little more than covers out-of-pocket costs may be advantageous to the utility and the public alike. Consequently these costs may be said to determine the least that will be charged.

*Classes of Customers.* What the lower limit for rates may be in any given case depends upon the conditions under which the service is rendered. Each line of business has conditions peculiar to itself, although some are more or less common to all lines. Among those conditions which are likely to influence rates with almost any type of utility are the time at which the service is used, the repetitive use of the service, the quantity in which the service is purchased, and the grade of service furnished.

*Peak Load Requirements.* When business is concentrated at peak periods there is greater aggregate cost involved than if the same aggregate volume of business were distributed evenly throughout a day, week, month, year, or longer span of time. This situation is not peculiar to a utility, but places a heavier burden on it than on an unregulated enterprise. The protection of a utility from competition imposes a burden on it to

meet peak requirements. Some utilities are in a position to classify their customers on the basis of whether service is wanted at the peak or the off-peak period. Telephone companies charge less for night and Sunday messages than for day service throughout most of the week. Electric companies distinguish between residential customers, whose requirements dominate peak load in the evening, and the industrial customers, who call for most of their service during the day. On the other hand, trolley companies usually make the same charge for their service at all times of the day.

How much of the aggregate cost must be charged to the peak demand depends upon how much off-peak business can be obtained to share the general overhead. If productive facilities are otherwise idle, lower rates are likely to attract off-peak business. The only cost of importance for such business is that incurred by reason of it. Any rate which more than covers this cost contributes to overhead and reduces the amount which must be met by the peak demand. Thus both peak and off-peak customers may benefit by their classification.

*Repetitive Requirements.* Whether service is required at peak or off-peak periods, some customers use the service of a utility repetitively and others only occasionally. If utilities were obliged to furnish only such service as was required by regular customers there would ordinarily be less equipment required than when provision must also be made for irregular customers. The peak demand for local transportation is considerably higher on stormy than on pleasant days, when many persons drive their own cars or even walk to and from work. In some cases regular use can be encouraged by lower rates. Thus railroads sell commutation tickets at a lower trip rate than for single-trip tickets. Summer telephone subscribers at resorts are sometimes charged more per month than regular subscribers.

*Quantity of Service.* Most utilities have rates which are classified on the basis of the quantity in which their service is used by any customer at a particular time. The cost for handling carload shipments is lower than for less than carload

lots, and this reflects itself in lower carload rates than the less than carload rates. Whether goods are shipped in large or small quantities, the actual terminal costs are the same for a long as for a short haul. On a mileage basis, therefore, these costs decline as the distance of the shipment increases. In some cases rates are lower per ton or other unit for a long than for a short haul. When a sufficient number of persons travel in a group so as to require an entire railroad car, lower fares can be obtained by chartering a car than by purchasing individual fares, and still lower rates can be obtained by chartering a train than by chartering a single car. With most metered services there is a minimum charge as consumption falls below a certain level. Consumers pay more per unit for service consumed within this minimum limit than if larger quantities were consumed. Moreover, for most of these services there are "step rates," with lower rates applying as the quantity of service consumed increases.

*Grade of Service.* In some instances there are different grades of service available to customers and this is taken into account in determining rates. Rates are higher for single-party telephone lines than for multiple-party lines. Railroad passengers using day coaches pay two cents a mile and Pullman passengers pay three cents with an additional charge for the Pullman service itself. Sometimes railroads guarantee the prompt arrival of their trains, as with the Twentieth Century Limited, and make an extra charge for fulfilling this guarantee.

#### B. BENEFIT OF SERVICE

While various factors affect the cost of rendering services, these do not fully explain the particular rates which are charged. The cost under any particular set of circumstances merely fixes the lower limit of the rates. The upper limit is fixed by the benefit of the service to the customer, as reflected by the demand schedule. Assumptions with respect to demand schedules influence utilities in the rates they request and influence the rates which regulatory bodies grant.

The manner in which the estimated demand influences a

public utility in its requests is illustrated by an experience of the railroads in 1931. At that time the Interstate Commerce Commission was required by law to grant rates which would enable the railroads to have a fair return on a fair valuation of their property. At the same time losses were being sustained by the railroads in both their passenger and freight branches. Consequently the roads were legally entitled to relief in the form of higher incomes. But the roads did not request any increase in passenger rates, despite the losses being sustained in furnishing this service. Apparently the roads assumed that the demand for passenger service was elastic and that by increasing rates they would lose so much business that a smaller rather than a larger net income would result. On the other hand, the roads requested a flat 15 per cent increase in freight rates. Apparently the demand for such traffic was assumed to be inelastic. If such were the case, comparatively little traffic would be lost by higher rates and hence a larger total net income would be received. In other words, the roads sought to place the burden of greater income on that part of their business which they thought would bear higher rates without much reduction in the volume of business.

The reply of the Interstate Commerce Commission to this request illustrates the manner in which the estimated demand influences a regulatory body in fixing rates. The request for a flat 15 per cent increase in freight rates was refused, although the need for and legal right to more income was admitted. In refusing the request the Commission contended that such an increase in freight rates would create a worse financial situation for the roads. It was feared that a higher level of rates would drive so much business to other methods of transportation that the roads would lose instead of gain. In other words, the Commission believed that the demand for freight transportation in general was inelastic rather than elastic. The Commission offered, however, to consider raising rates on particular classes of freight. Presumably the higher rates would be applied to those classes of freight which either needed rail transportation or for which such transportation even at higher rates would be

the most economical method of shipment. In either case the higher rate would not result in much loss of traffic and larger income would be obtained. Thus the Commission offered, in effect, to raise rates on commodities with an inelastic demand, but refused to raise rates where the demand for transportation was deemed to be elastic.

In the passenger traffic field the influence of demand was mainly responsible for the fact that the Interstate Commerce Commission ordered a reduction in rates as a means of increasing the revenue for this service. In 1936, the passenger rate for day-coach service was reduced from 3.6 cents to 2 cents a mile. This was the first nation-wide rate change since 1920. But before the general change was made, different sections of the country had been experimenting with lower rates. These experiments had indicated that at lower rates railroad revenues would be improved. By this method the Southern Railway increased its passenger revenue in 1934 by 13.7 per cent over that of 1933, with substantially the same train-miles of service. This improvement was attributed by the Interstate Commerce Commission to the lower rates rather than to any important improvement in business conditions. The Chicago & Northwestern reduced base rates in 1932 to 2.5 cents, but found this ineffective in increasing revenues, while a base rate of 1 cent increased volume 500 per cent and provided greater revenue than a 3.6 cent base fare.

The benefit of service to the consumer is no less important in determining rates when an enterprise is operated by the government than when it is privately operated. This showed itself very clearly several years ago when the Federal Government raised rates for first-class mail from 2 cents to 3 cents an ounce. Immediately there was a decline in the extent to which the service was used. This was especially severe with local mail. Persons who formerly used the service in mailing checks monthly in payment of local bills began to have their checks delivered by members of the family. Instead of using the service in distributing monthly bills, electric, gas, and water companies used their employees to distribute them to customers

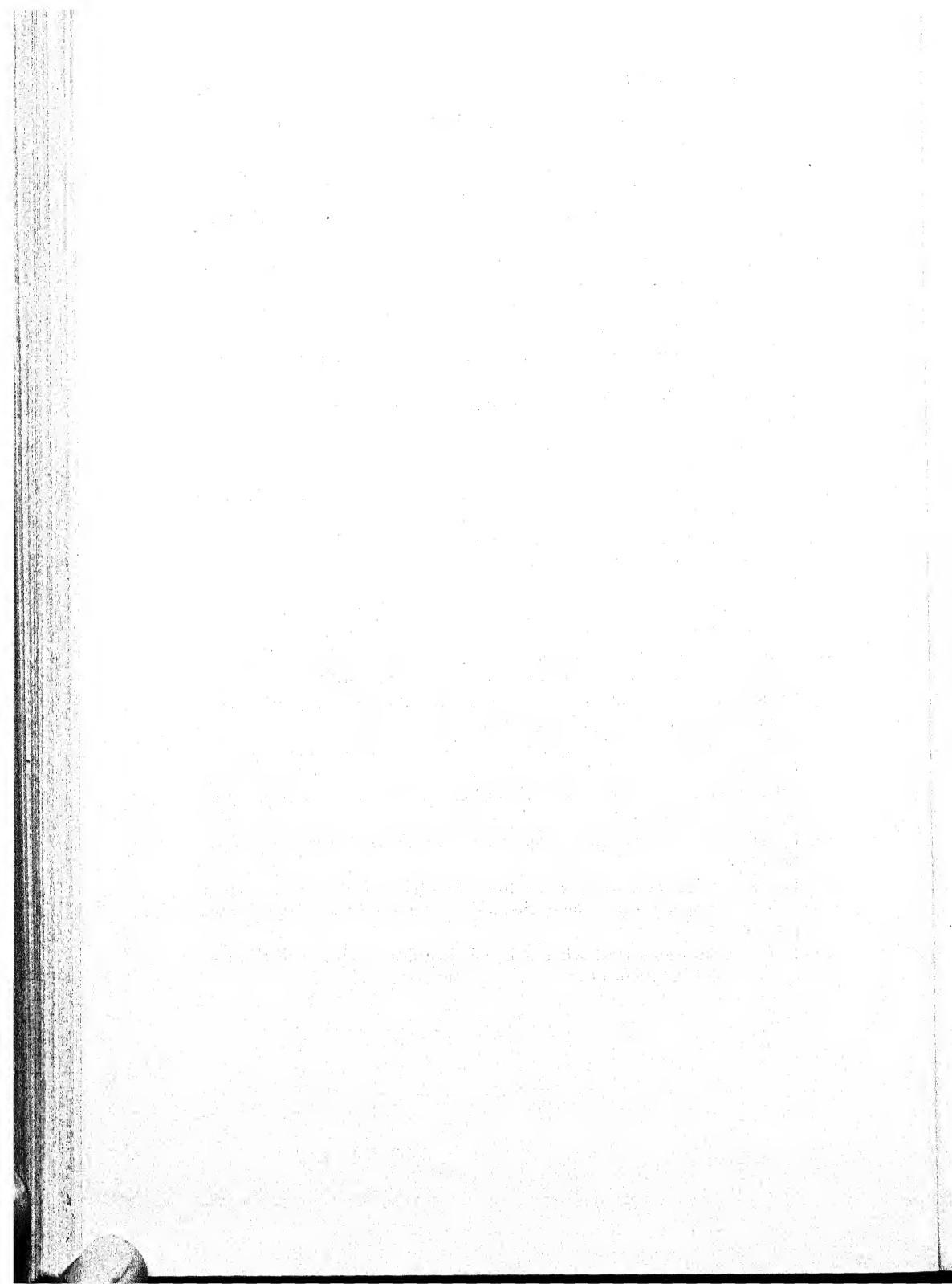
within a city or town. For outlying customers the mail service was still used. The net result was that the government found a reduction to 2 cents expedient for local mail or that collected and distributed through the same office.

Considerable difference of opinion exists as to whether governmentally regulated prices are higher than competitive prices would be for the same service. The legal restrictions surrounding regulation often place utilities in a position where they have a legal claim to higher rates than their own interests prompt them to enforce. Not until recently have regulatory bodies given much attention to reducing the costs of service. Mr. Eastman of the Interstate Commerce Commission, during an address made in 1935, observed that until the railroads suffered severe losses at the hands of truck, bus, and other types of transportation the Commission had given more attention to adjusting rates between competing roads than to the cost of rendering service. In other words, as long as it was possible to obtain sufficient income from the public to cover existing, even though wasteful, cost, very little attention was given to reducing the costs and thus providing cheaper transportation. If this situation exists under the regulation of a body as capable as the Interstate Commerce Commission, there is reason for suspecting even less protection of consumer interests with most state regulatory bodies. When it is realized that some regulatory bodies are merely tools of the public utilities they are expected to regulate, the situation becomes even worse. Certainly it can be said that regulation is no guaranty that the public will be protected from unreasonable rates. But there remains the debatable issue of whether consumers are protected more fully than in the absence of regulation.

#### QUESTIONS

1. "Whether concerns in a particular line of business are private enterprises or public utilities depends upon legislative enactment." Is this statement valid?
2. What is meant by the statement that "law rather than economics dominates in determining valuation for rate-making purposes"?

3. "Original cost and historical cost are similar in some respects and dissimilar in others." Explain.
4. What are the circumstances which have been most important in influencing the courts to reject original cost as a basis of valuation?
5. Explain the statement that "there are two different bases on which reproducing costs can be determined."
6. What difficulties are encountered in estimating the cost of reproducing the property of a public utility?
7. "Reproduction of service has points of strength and of weakness as a basis for valuation." Explain.
8. What circumstances have given rise to the use of bargaining as a basis of valuation?
9. Can a bargaining basis of valuation be considered economically satisfactory?
10. What proposals have been made for eliminating valuation in connection with public utilities?
11. "Under recent federal legislation a 'fair return' to railroads is determined differently than under earlier legislation." Explain.
12. Why must operating expenses and depreciation be subject to regulation in order to have effective regulation of the rate of return to public utilities?
13. Is there any basis for the statement that "the only test of a fair rate of return is whether or not the rate is acceptable to the courts"?
14. Explain how a seemingly reasonable rate of return may in fact be unreasonable in view of the financial structure of a public utility.
15. "Whether any particular rate is or is not reasonable depends partly on the valuation of the property." Explain.
16. "An adequate rate of return is essential for efficient management." Evaluate.
17. What are the economic limits within which the rates for service of a public utility must be set?
18. Explain the statement that "expediency may dictate lower service rates than law."
19. Do the service rates which result from classifying customers of a public utility correspond to the class price which often occurs with unregulated private enterprises?
20. In fixing rates for service what economic justification, if any, is there for considering the benefit of the service to the customer?

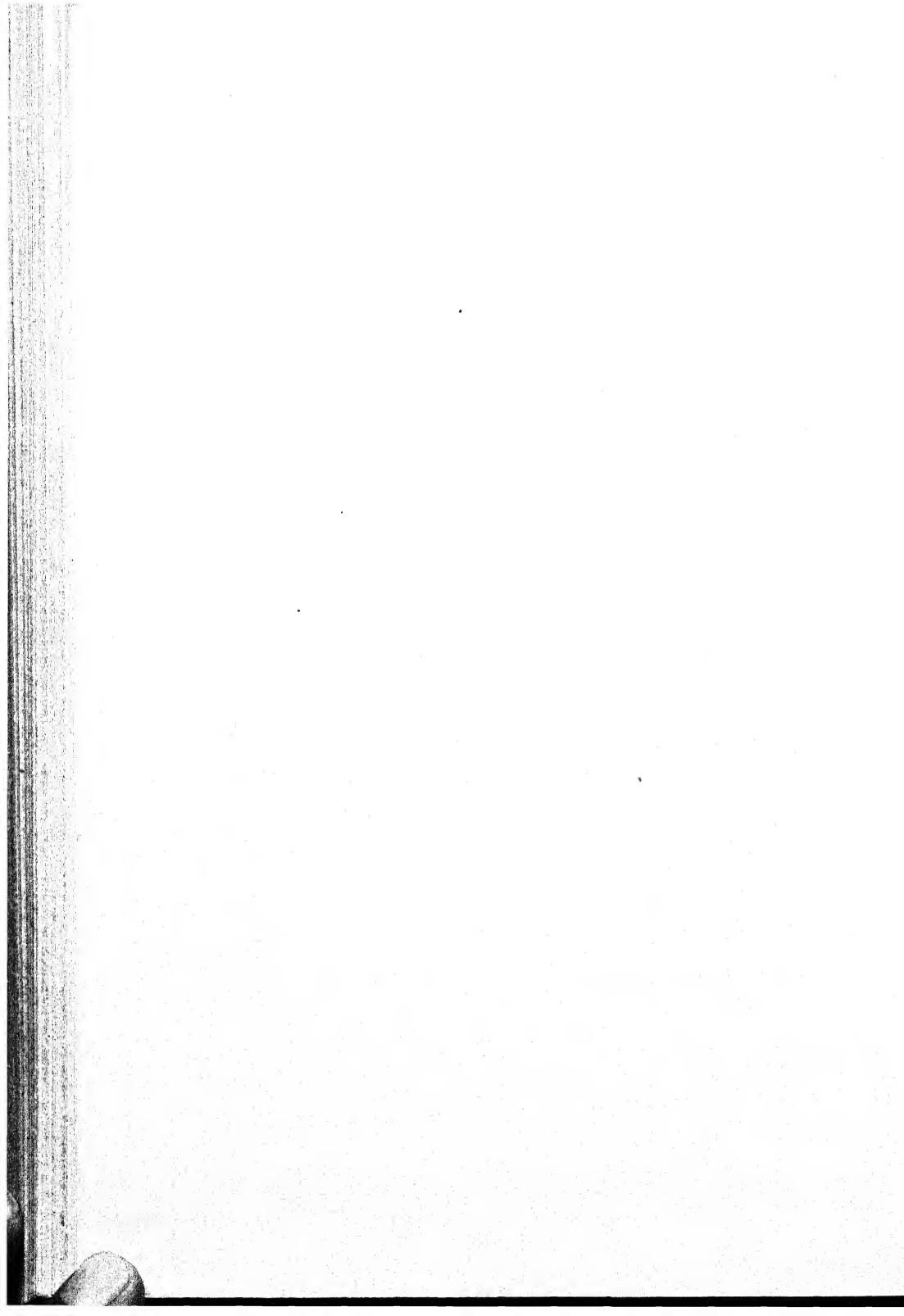


PART FIVE



*National Income, Its  
Sources and Distribution*





## CHAPTER XXI

### NATIONAL INCOME

INCOME is a result of man's struggle with the forces of nature. From the fields, mines, factories, and other centers of specialized activity flow the commodities and services which constitute the income of goods for the nation. This aspect has already been considered at length in the analysis of production. The mental satisfactions derived in the course of producing goods or in the course of consuming them are sometimes referred to as psychic income. Most income of this kind is connected with consumption: wholesome food furnishes nourishment, and pleasurable sensations are experienced in eating it; clothing provides bodily comfort and also opportunities for ostentation and display. To only a limited extent as yet are the personal satisfactions which constitute psychic income obtained in producing goods. Instances of this occur when artists express their ideas and emotions in pictures, sculpture, or music, or when craftsmen embody their skill in a fine piece of jewelry or furniture. Despite the importance of psychic income, it is incapable of being measured and will not be emphasized for present purposes. Rather, attention will center on the money income, the income which represents the exchange power of goods. By using the dollar as a common denominator it is possible to correlate the values of widely different kinds of commodities and services.

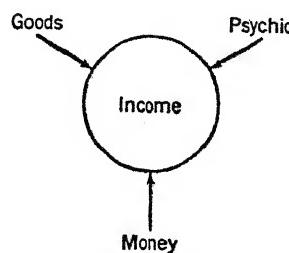


FIGURE 59. TYPES OF INCOME

#### I. SIZE OF NATIONAL INCOME

*Different Estimates.* When expressed in terms of dollars, estimates of the national income vary in amount. This is

partly accounted for by incomplete information as to some of the items composing the income. Usually a more important explanation is that estimates are made for different reasons, and the particular problem under consideration determines the items to be included or excluded. For some purposes income from foreign investments would be included, but not for other purposes. Similarly the rental value of homes occupied by their owners would constitute income for some purposes but not for others.

As a counterpart to the earlier analysis of production, the money value of goods currently produced and the distribution of that income will be considered here. Other sources from which income might be derived, including foreign investments, would probably increase the aggregate by about 10 or 12 per cent. Thus in 1929 the estimated income from current production amounted to about 82 billion dollars, while other sources furnished 10 billion dollars, making a total realized income of 92 billion dollars.

*Total Income in Current Dollars.* Despite the changes which occur from time to time in the price level, income may be measured in terms of dollars with whatever purchasing power they have at the time the income is produced. When income is estimated in this way it is said to be expressed in terms of current dollars. During the present century such income has shown an upward trend until the severe setback following 1929. This is indicated by the heavy line in the upper diagram of Figure 60. From 17 billion dollars at the beginning of the century the income increased to 67 billion in 1920, and then, after a noticeable decline to 53 billion, continued the upward course reaching the peak of 82 billion in 1929. From this pinnacle income toppled suddenly to 40 billion, and by 1935 had recovered to about 53 billion.

*Income in 1913 Dollars.* When allowance is made for changes in the general level of prices, a somewhat different situation shows itself. If yearly income in current dollars is adjusted for price level changes on the basis of Snyder's index of general prices, using 1913 as a base, the results are shown by

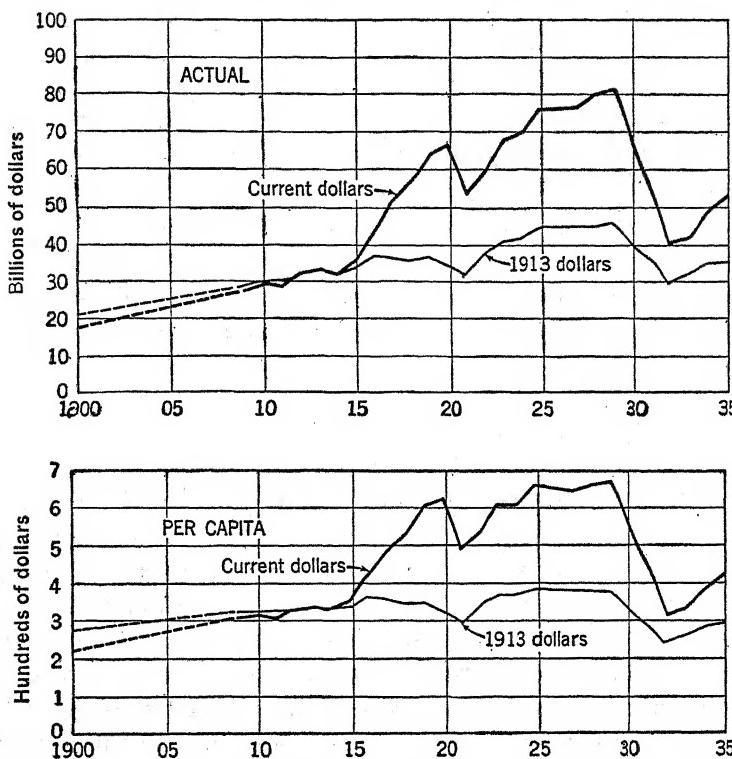


FIGURE 60. NATIONAL INCOME PRODUCED

Estimates from 1900-29, from *America's Capacity to Consume*, by Brookings Institution, Washington, and estimates from 1929-35 from *National Income in the United States, 1929-35*, United States Department of Commerce.

the light line of Figure 60. On this adjusted basis, real income, or general purchasing power of actual dollar income, did not increase so much prior to 1929 nor fall so drastically thereafter as the income in current dollars suggests. During the period 1915 to 1920, when income in current dollars was rising by leaps and bounds, real income did not share this tendency, and toward the end of the period it actually declined. After the temporary setback, in 1921, real income increased for several years until around 1925 and then remained about the same until after 1929 when it dropped to the level at which it was twenty years before.

In adjusting the amount of income in current dollars for

changes in the general level of prices, the results are necessarily affected by the kind of an index used to show changes and also by the base period selected. If, instead of using Snyder's index of general prices, the wholesale price index of the United States Bureau of Labor Statistics had been used, the adjusted level of income would have been somewhat different. Or if the level of prices in 1926 had been used as a basis of comparison instead of those in 1913, again the adjusted income would have been different. But these differences would not have affected the main tendencies which are of primary interest here. At the same time, it is important to keep these points in mind, for they often furnish the key to what seem to be conflicting estimates of adjusted income for the nation.

*Per Capita Income.* Since income furnishes the means by which the entire population must live, changes in the amount per person or per capita are particularly important. These changes since 1900 are shown in the lower diagram of Figure 60. If the entire income produced in the presumably prosperous year of 1929 had been divided evenly among all the men, women, and children in the country at that time, each would have received about \$673. When it is realized that the all-time high total income of this year would have furnished an average weekly income of only \$13 per capita or \$39 for a family of three, there is cause to wonder whether the productive facilities of the nation cannot furnish more than this or whether the manner in which the facilities are used is grossly defective. Certainly such income is not sufficiently large to be impressive in a nation with the abundance of resources found in this country. When allowance is made for changes in the purchasing power of money, the growth of real income during the present century is even less impressive than the growth in current dollars. At its height, between 1925 and 1929, the real income was very little higher than before the World War, and was lower in 1932 than at any time during the present century. In short, real income has shown something of an upward tendency, but the movement has been far from impressive in view of the available facilities for production.

## II. DISTRIBUTION OF NATIONAL INCOME

## A. AMOUNT DISTRIBUTED

The entire amount of income produced is not necessarily the amount which is distributed to individuals in various forms. For example, after paying expenses of operation, including wages and interest, the earnings of the United States Steel Corporation amounted to over two billion dollars between 1902 and 1930, while only one billion was actually distributed as dividends to the common stockholders. The tendency for concerns to accumulate funds in periods of good business gives rise to a gap between currently produced and currently distributed income.

The extent of the gap in the years following 1929, as estimated by the United States Department of Commerce, is shown in Figure 61. In 1929 income produced amounted to slightly over 81 billion dollars, while in that year only 78.6 billion was paid out. Thus, the value of goods produced exceeded by about 2.4 billion the amount distributed. In the following years the opposite situation existed. During this time the produced and distributed income declined, with the distributed income exceeding that produced by yearly amounts ranging from 1.6 to nearly 9 billion dollars. In 1935, the difference was about 0.6 billion dollars, with 53.6 distributed and 53 produced.

## B. DISTRIBUTORS OF INCOME

In distributing the national income each branch of business activity plays a part, although the parts are of unequal importance. This is shown in Figure 62 with the various branches of business arranged on the basis of the proportion of the nation's income each distributed in 1929. Manufacturing led with 23

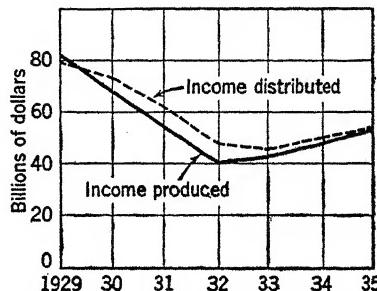


FIGURE 61. NATIONAL INCOME PRODUCED AND DISTRIBUTED

From United States Department of Commerce.

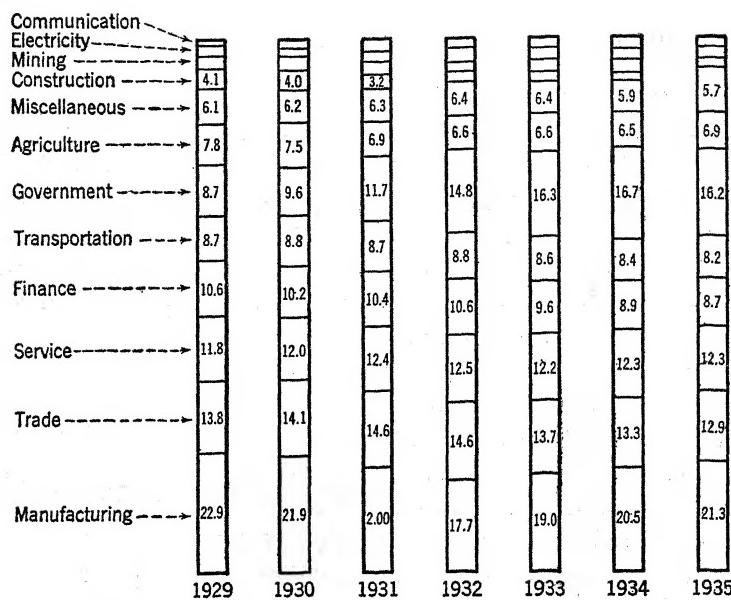


FIGURE 62. DISTRIBUTORS OF NATIONAL INCOME AND THEIR RELATIVE IMPORTANCE

From United States Department of Commerce.

per cent. Its nearest rivals were trade with 14 per cent, service activities with 12 per cent, and finance with 10 per cent. The others ranged from about 8 per cent or 9 per cent each for agriculture, transportation, and governments to 4 per cent for construction, 3 per cent for mining, and 1 per cent for communication. In the years following 1929 the distributors tended to retain the same relative importance. The outstanding exception was the increase in income distributed by the government. This expanded from about 9 per cent to nearly 17 per cent by 1935. Among the smaller distributors, the construction industry declined from 4 per cent to about 2 per cent.

If a longer range view were taken, the picture would be much the same as in 1929 except for the phenomenal fall in the importance of agriculture as a distributor of income. In 1919 this industry furnished nearly 21 per cent of the national income and was second only to manufacturing. But by 1929 agriculture

had fallen to seventh place, as it then distributed slightly less than 8 per cent of the nation's income.

When industries are ranked on the basis of the amount of money income they either produce or distribute, there is danger of misinterpretation. The fact that in 1929 agriculture furnished only about 8 per cent of the income does not mean that the importance of agriculture to the economic system as a whole and to the prosperity of the nation is represented by the 8 per cent. In the same year communication activities accounted for only 1 per cent of the national income, but that does not indicate the importance of that industry to the prosperity of the nation. These figures indicate only the relative total monetary values produced or distributed by the different industries. When goods are produced for the purpose of exchange, the value of the goods expressed in money represents only their purchasing power over other goods. The physical volume of production in any industry and the benefits derived from that volume may be much greater than that indicated by its money value.

#### C. FUNCTIONAL DISTRIBUTION

Both persons and property contribute to production, so that a distinction may be made according to the type of service performed. The basis of this classification is known as functional distribution. It is not always possible, however, to distinguish the share of income received by individuals for their own services from that received by them for the use of their property. This is particularly so with personally owned enterprises. Withdrawals by proprietors represent a payment both for their services and for the use of their property. In 1929, withdrawals of proprietors are estimated to have accounted for about 18 per cent of the distributed income, as shown in Figure 63. In other types of enterprise more satisfactory

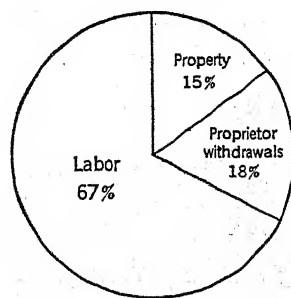


FIGURE 63. FUNCTIONAL DISTRIBUTION OF INCOME IN 1929

separation is feasible, so that it can be said with more certainty that income from sources directly due to property accounted for 15 per cent, while that arising from labor accounted for two thirds, of the national income.

Largely because of the uncertainty surrounding proprietor withdrawals, the changes in the relative sizes of income arising from labor and that arising from property cannot be satisfactorily determined. It appears, however, that the proportion which is distinctly due to labor increased during the World War and has continued on a higher level than before the conflict. This is shown in Figure 64. It also appears that in recent years the income arising distinctly from property has also increased, as indicated by its widening band in the figure. The shrinkage in proprietor withdrawals is apparently accounted for almost entirely by the depressed condition in agriculture where personally owned enterprises predominate. According to the Brookings Institution, proprietor withdrawals in non-agricultural fields constituted 11.2 per cent of the national income in 1919, as compared with 10.5 per cent in 1929, while in agricultural fields the withdrawals fell from 14.3 to 6.8 per cent.<sup>1</sup>

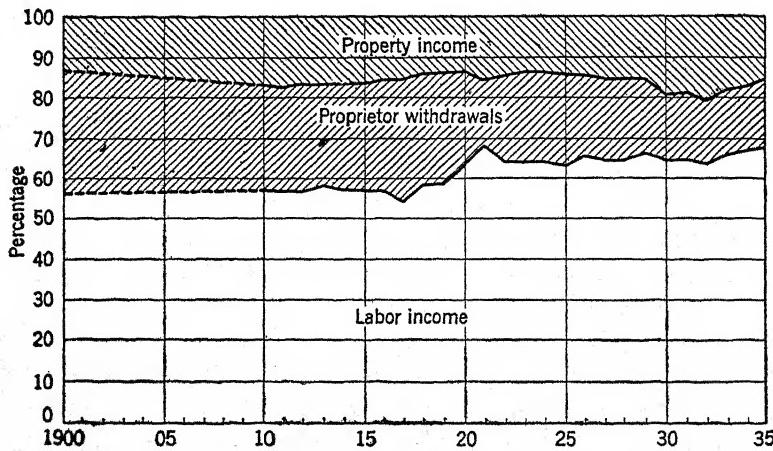


FIGURE 64. FUNCTIONAL DISTRIBUTION OF INCOME, 1900-35  
From *America's Capacity to Consume*, by Brookings Institution.

<sup>1</sup> See *America's Capacity to Consume*, by Maurice Leven, Harold G. Moulton, and Clark Warburton. Published by the Brookings Institution.

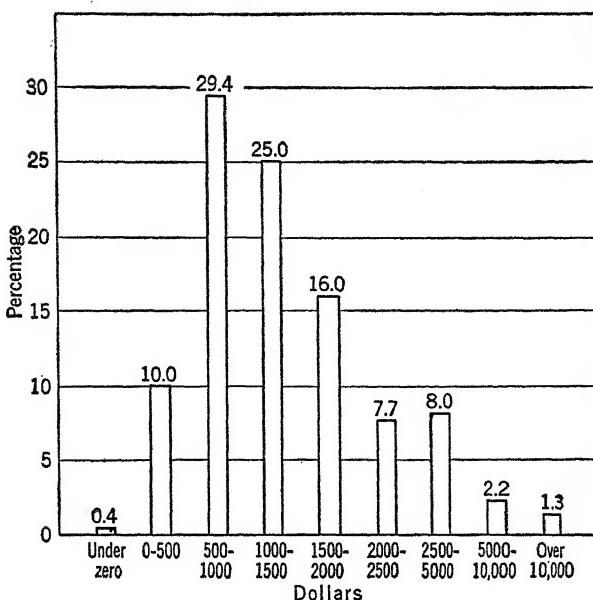


FIGURE 65. PERSONAL DISTRIBUTION OF INCOME IN 1929

From *America's Capacity to Consume*, by Brookings Institution.

#### D. PERSONAL DISTRIBUTION

Regardless of whether the national income is distributed as compensation for labor or for property, or a combination of both, the amounts received by individuals are widely different. At the one extreme are a few of those with "negative incomes," as in the case of individuals who are living by consuming their savings. At the other extreme are the incomes running into millions of dollars. Even in the depression year of 1934, one income of \$6,000,000 was reported.

The predominance of very small incomes is more significant than the fact that individual incomes are widely different in size. This is shown for the year 1929 by Figure 65. Out of a total of roughly 49,000,000 who received incomes, 10 per cent received less than \$500, nearly 30 per cent received between \$500 and \$1000, while 25 per cent received between \$1000 and \$1500. Thus, two thirds of the total population received in-

comes of less than \$1500 — an amount equivalent to \$125 a month or less than \$30 a week. Incomes between \$1500 and \$2000 were received by 16 per cent, while only 8 per cent received amounts running from \$2000 to \$2500 a year. If all those receiving less than \$2500 are grouped together they constitute nearly 90 per cent of those receiving income during the supposedly prosperous year of 1929. About 8 per cent had incomes between \$2500 and \$5000, while slightly over 2 per cent fell between \$5000 and \$10,000. Only 1.3 per cent had incomes of \$10,000 or more.

It will be fruitful to examine further this top group with incomes of \$10,000 or more. The fact that the group is small does not mean that they received a relatively small part of the total income. Rather, this group absorbed a much larger proportion of the total income than the size of the group would suggest, for they claimed 25 per cent of the national income. Those with income of \$50,000 or more constituted  $\frac{1}{10}$  of 1 per cent of all persons receiving income, but they received 14 per cent of the total income, while the group having incomes of \$100,000 or more a year constituted only  $\frac{1}{20}$  of 1 per cent of all those receiving incomes, but their incomes amounted to 10 per cent of the total national income.

### III. REASONS FOR UNEQUAL INCOMES

Without attempting to examine all the conditions which give rise to unequal incomes, it is possible to notice the major circumstances contributing to them. These cluster around unequal ability, inheritance, monopoly, dishonesty, and fortuitous events.

*Unequal Ability.* The commonly accepted explanation for wide differences in income is that there are differences in the ability of individuals; but to place the entire explanation on the basis of this one factor is at least exaggerating its importance and ignoring the influence of other circumstances. Moreover, the relation between ability and income is not so simple as it may appear.

In the first place it must be realized that differences in ability do not necessarily give rise to unequal incomes. A humorist such as the late Will Rogers has distinctly different abilities from a Caruso, but such differences in themselves do not result in different incomes. However, in any particular type of work there are differences in the degree of ability, and these may be responsible for unequal incomes. But here a distinction is often necessary between natural and acquired ability. It is well known that wide differences exist in both types. These variations may or may not account for inequality of income. Certainly in so far as incomes differ because of variations in acquired ability, the inequality of income may reflect unequal opportunities for the development of natural ability rather than the existence of different kinds and degrees of such ability.

*Inheritance.* For many years inheritance has contributed to inequality of income. The traditional right of individuals to pass their accumulated wealth on to others of their own choosing has made possible some of the large incomes of today. It requires the combined lifetime savings of thousands of working people to equal the inheritance of a single heir to part of the Woolworth five-and-ten-cent store fortune or to the Reynolds tobacco fortune. In some cases the inheritance is the nest egg which makes possible further accumulation; in other cases the inheritance is dissipated within a few generations. But this does not alter the fact that most of the large incomes have inheritance of property at their foundation. Mere mention of such names as Astor, Vanderbilt, Gould, Morgan suggests fortunes passed on to succeeding generations.

*Monopoly.* Many fortunes, both great and small, have originated through the possession of privilege or power arising from monopolies. It may sound well for John D. Rockefeller, in commenting on one of his donations, to say, "The Good Lord gave me the money," but a somewhat different explanation is also appropriate if we remember that the foundation for his wealth came through the exercise of monopoly power by the Standard Oil Trust, which he directed. This, and other trusts of that day, were famous for their unscrupulous business practices and ruthless destruction of competition.

The ownership of land has also contributed to fortunes from which large incomes were subsequently derived. In many cases fortunes made in shipping, trade, and other pursuits have been vastly augmented by subsequent investment of the funds in land. Most of the nation's land, destined to yield fabulous incomes, was so abundant in relation to the demand for it that relatively little had to be paid in early times in order to acquire large tracts. The growth and development of population inevitably caused the land to become scarcer and more valuable, so that with the passage of time the owners gained increasingly large incomes from their investments.

Franchises have frequently become devices for exploiting the public that they were intended to serve, and, through their exploitation, large incomes have arisen. One instance of this is the condition arising from the interests of the underlying companies of the Philadelphia Rapid Transit Company. Over fifty years ago, the state legislature chartered thirty-nine street railway companies and gave them exclusive rights to operate on various streets. For this, the city received \$59 a car and the seldom-kept promise to pave the streets on which the lines operated. In time, special charters were required for the introduction of electric cars. New companies were formed to acquire and consolidate the lines of the horse-car companies. One of the original companies was the Green and Coates Streets Railway, with an original investment of \$150,000. In the consolidation, the rights of this company were leased to the People's Passenger Railway for 999 years at \$60,000 a year, or 41 per cent on the original investment. By a series of similar steps, all the underliers were welded into the Union Traction Company. When this company was unable to meet its obligations for inflated rentals, these were turned over to a new company, the Philadelphia Rapid Transit Company, which, in addition to assuming these debts, agreed to pay the Union Traction Company \$1,800,000 a year for 999 years. By 1932 the P.R.T.'s obligations for the benefit of underliers amounted to about \$9,000,000, most of which represented payments for claims based on franchise rights rather than for physical property or services.

The exercise of monopoly power may also be employed by organized groups of labor. The building trades have long been among the most solidly organized unions, especially in New York City, where the union has been in a position to obtain higher rates than anywhere else in the country. Even when allowances are made for somewhat higher living costs in New York City, the wage rates there are distinctly out of proportion to those in other places. Thus, in 1930, the New York rate for plasterers was \$1.92 an hour as compared with \$1.70 in Chicago, \$1.62 in Philadelphia, and \$1.25 in Atlanta. Exploitation by highly organized groups of workers is essentially the same in its effect as that often practiced by employers in dealing with the public. However, the exercise of monopoly power which yields even \$2 an hour would never give rise to such individual fortunes as those yielded by monopolies of other types. At the same time, such power does help to explain some of the differences in wage income which are not related to ability.

*Dishonesty.* Large incomes have been gained by fraud, bribery, trickery, and other forms of dishonesty. It is reported that the bulk of one famous fortune was obtained by extortion, blackmail, and theft. So effective was the founder of this fortune in bribing public officials that he was able to obtain sufficient government subsidies to build his ships with virtually no cost to himself. Legislators and judges alike fell under the control of another famous fortune by which the Erie Railroad was looted. The founder of the fortune, according to a 1908 report of the Interstate Commerce Commission, acquired vast coal fields in Utah, Oklahoma, and Wyoming through "fraud, perjury, and violence." Still another fortune originated in fur-trading, made extremely profitable by getting Indians drunk and then swindling them. Later, the founder of the fortune used trickery, bribery, and fraud in acquiring, at very little cost to himself, considerable land holdings in New York City.

*Chance Events.* Among the circumstances which gave rise to fortunes of various sizes are unforeseen events. Only by luck did Stephen Girard have two vessels in a port of San Domingo when insurrection broke out on the island. The planters car-

ried their valuables on board these ships and then returned to the island, where they apparently fell victims to the insurrectionists. This left Girard in possession of their property. Upon return of the ships to Philadelphia he advertised for the owners, but when none appeared he sold the property and used the proceeds to build the ships which enabled him to engage in profitable China and West Indies trade. To a much greater extent than is generally admitted, chance events toss fortune in one direction and then in another. Mention has already been made of the extreme profits that war brings to certain groups, especially to those in a position to exercise monopoly control over the sinews of war. The direction in which fortune moves is sometimes dependent upon court decisions with respect to property rights. It is estimated that the decision upholding the Mellon claims to a patented process for producing aluminum was worth \$100,000,000.

#### IV. SHARING THE WEALTH

There is nothing new in the inequality of income nor in the circumstances which give rise to it. But there is increasing dissatisfaction with the situation, and "Share the Wealth" has come to be a popular battle-cry. In order to decide the merits of proposals it is necessary to know what is to be shared, the purpose of sharing, and how it is to be brought about.

##### A. WEALTH AND INCOME

Some of the proposals for sharing the wealth do not make clear just what is to be shared. This is partly due to the fact that the term wealth often expresses two connected, but basically different, ideas.

A useful distinction has long been made between wealth and income. When an individual engages in farming he must have land, buildings, and equipment. Depending somewhat on the kind of farming, he may also have cattle and other animals. This physical property constitutes the wealth used in the process of producing the crops which are the income derived from

man's use of the wealth. Furniture produced in a factory represents the income derived from the use of plant and equipment. A somewhat similar distinction is used as the basis for the accounting statement of profit and loss on the one hand and of assets and liabilities on the other. The statement of assets and liabilities shows the net wealth possessed by the business at a given time, usually at December 31 of each year. The profit

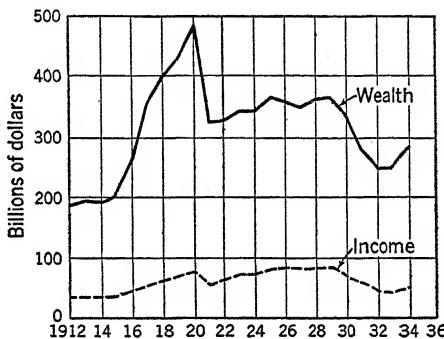


FIGURE 66. NATIONAL WEALTH AND INCOME  
Data from National Industrial Conference Board.

and loss statement, on the other hand, shows the net income of the enterprise during a period of time, usually from January 1 to December 31 of each year. In short, wealth refers to a stock of goods existing at a given time, while income refers to the flow of goods made possible by the use of wealth and labor over a period of time. Although wealth usually refers only to tangible goods, income includes also such intangible goods as the benefits derived from entertainers, lawyers, physicians, and teachers.

When wealth and income are measured or expressed in terms of money, there is a very decided difference in their amounts. This is shown in Figure 66, which gives the estimates of the National Industrial Conference Board for the period from 1912 to 1934. According to these estimates the national wealth in 1929 was about 362 billion dollars, while the income was slightly over 20 per cent of this amount. It will be realized, of course,

that the very rapid growth in national wealth which culminated in 1920 is accounted for largely by an increase of over 100 per cent in the general price level. It is also likely that decided changes in prices have even greater effect on the value of wealth than on the money equivalent of the income produced with the aid of that wealth. The declining estimates of wealth immediately following 1929 are accounted for by a shrinkage in the money value of assets rather than a decrease in the amount of wealth. Very probably the amount of wealth increased despite the fall in its monetary value. The decline in income, however, reflected both a diminished flow of goods and a decline in their value. In any event the value of the income is only a fraction of the value of the wealth.

Not only is there an important distinction between wealth and income, but also between wealth and the claims to it. No recent analysis has been made of the particular items constituting the national wealth. The latest figures are those of the Census for 1922, and these probably were applicable as late as 1929. On that basis, it appears that over half the national wealth was in the form of land and buildings and that nearly one fifth was in the form of machinery and equipment. These two groups are in the nature of "fixed assets" and together constitute nearly 75 per cent of the total wealth. Products of farm, factory, and mine, together with imported goods, accounted for about 13 per cent, while livestock accounted for about 2 per cent. Personal property, including clothing, articles of personal adornment, furniture, and similar goods, was estimated at 12 per cent. This wealth exists independently of its ownership. The claims to it are often represented by documents of various kinds such as stocks, bonds, deeds, and mortgages. For some of it, especially personal property, possession is likely to be the only evidence of ownership.

#### B. PURPOSE OF SHARING

Whether or not wealth or the income from wealth is to be shared depends on the purpose of the sharing. Some critics of existing arrangements are interested only in reducing the in-

equality of income, while others seek to destroy the power which comes through the private ownership of productive wealth.

It is quite possible to have considerable redistribution of income without much change in the ownership of productive wealth. More persons are interested in changing the distribution of income than in changing the ownership of the wealth which produces the income. If in any one of several ways the inequality of income were reduced, many advocates of sharing would be satisfied to allow those persons now possessing the productive wealth to continue in their possession. Comparatively few persons advocating the greater sharing of income urge equal incomes for all. Even Karl Marx did not advocate such equality. The fear of complete equality has often been generated deliberately as a smoke screen to conceal real issues and to make otherwise sensible and sound proposals look ridiculous. In fact it is generally realized that equality would probably tend to destroy some of the benefits sought by reducing the existing inequality.

But there are some who are definitely interested in eliminating the private ownership of productive wealth. They contend that inequality of income arises mainly from the selfish control of productive wealth. With this power of control at their disposal, it is possible for the few to exploit the masses. It is argued, therefore, that inequality of income is merely a symptom of the fundamental disease, which is the private ownership of productive wealth. This group of critics, consequently, would bring about less inequality by eliminating the circumstances which give rise to most of the large incomes. The effect would be the sharing of both wealth and income.

Incidentally, most proposals draw a distinction between personal and productive wealth. Proposed sharing does not ordinarily relate to clothes, furniture, and other personal property which individuals possess for use by themselves and their families. Rather, the ownership relates to productive wealth such as land, factories, machinery, and railroads. These physical things are, in effect, the tools with which human beings must

work, and it is proposed to share the ownership of these tools which are essential in the modern process of producing goods.

### C. TYPES OF SHARING

The proposals for sharing also differ as to the type of sharing, which may be either individual or collective in nature, although both types are not equally well suited for sharing wealth and income alike.

Most proposals provide for the collective sharing of wealth. It is of course not inconceivable that the inequality of ownership of productive wealth might be reduced through some plan for wider distribution of the securities which represent the productive wealth. This would be individual sharing of wealth. Already there has been increased diffusion of paper claims to productive wealth through the ownership of stock by employees, consumers, and the general public. But it has also been noted that such ownership did not carry with it corresponding diffusion of the control of the enterprises. Therefore collective ownership of wealth, or government ownership, is often proposed.

Whether productive wealth is owned privately or governmentally, the income may be distributed on either an individual or a collective basis. Individual sharing occurs when benefits are allocated to particular persons. When, as a result of a strike or of peaceful negotiations, employers pay higher wages, the individual workers receive greater shares of income than before. Similarly, from compulsory workmen's compensation insurance, the injured worker, or his family, in case of a fatal accident, receives an individual share in the income. Unemployment insurance likewise distributes benefits to particular individuals. But there may also be collective distribution. When a community provides a public park or playground, its benefits are available to any who choose to avail themselves of its facilities. Medical attention might be furnished in substantially the same way that public education is now furnished. The cost of the service might be met through taxation of those with large incomes. It is of course true that in all these cases

individuals receive the benefits, but these are collective in the sense that they are available to everyone, rather than to particular individuals who must meet certain qualifications before being eligible for the benefit.

In the following chapters the outstanding ways in which the national income is distributed will be examined in some detail, and further light will be thrown on circumstances affecting the distribution.

### QUESTIONS

1. Distinguish between goods and psychic income.
2. What may account for differences in estimates of the national income?
3. "In adjusting the amount of income in current dollars for changes in the level of prices, the results are necessarily affected by the kind of index used and the base period selected." Explain.
4. Explain what is meant by per capita income.
5. "If all the income produced were actually distributed there would be an opportunity for a considerably higher standard of living in this country." Explain and evaluate.
6. What reason, if any, is there for believing that the economic importance of various industries is shown by the amount of income they distribute?
7. "From the standpoint of the amount of income distributed, the various industrial groups tend to maintain the same relative importance." Is this statement valid?
8. What is meant by functional distribution of income?
9. "The relative size of labor and property income cannot be determined satisfactorily." Explain and give reason.
10. "In so far as labor and property income can be separated, the property income has tended to increase at the expense of labor income." Is this statement accurate?
11. It is sometimes said that "an average income means nothing with such a distribution of income among individuals as exists in this country." Why would the distribution of personal income affect the significance of the average income for the working population?
12. "While some persons have very large incomes, these incomes do not account for any important part of the entire national income." Is this statement accurate?
13. "Differences in income are accounted for by differences in ability." Evaluate.
14. What is meant by the statement that "the existence of different abilities and the measurement of them are two quite different things"?

15. "It is impossible to reduce the inequalities of income by legislation." Does an examination of the causes of inequality support this statement?
16. "There is no longer any great opportunity for large fortunes to be derived from the ownership of land." Are there any reasons for believing that such is the case?
17. Distinguish between: (a) Wealth and income, (b) wealth and claims to wealth, (c) personal and productive wealth.
18. What is meant by the expression "redistribution of income"?
19. "Redistribution of income not only is intended to destroy private ownership of wealth but will actually do so." Evaluate.
20. "Income may be redistributed on an individual or on a collective basis." Explain.

## CHAPTER XXII

### WAGES

THAT part of the national income distributed as wages constitutes compensation to individuals for work performed in the productive process. Even though labor compensation is often considered only as a necessary evil, it is highly important for the smooth and effective operation of the economic system as a whole. Only by realizing this can one understand the reasons for proposals seeking to increase labor's share of the national income at the expense of the other shares and at the risk of increasing money costs of production. Closely allied with wages are various forms of compensation for inability to work, such as old-age pensions. Payments of both types may be considered as labor compensation in contrast to compensation for the use of property. Wages, rather than allied compensation, are of dominating importance and will be emphasized in this chapter.

#### I. DETERMINATION OF WAGES

##### A. BASIC FORCES

In a sense, all the forces which can exert any considerable influence on wages may be said to be basic. As the term is used here, it refers to those forces which operate in the absence of deliberate control and whose operations tend to establish an automatic balance between demand for and supply of labor.

*Demand for Labor.* A number of circumstances combine to determine the extent to which employers want particular kinds and grades of labor and to determine the rates at which workers will be engaged. These circumstances include the selling price of the goods, the competition among all the factors required for the creation of the goods, the productivity of labor, and the making of advance payments to labor for its services.

(a) *Derived Demand.* At the outset it is necessary to realize

that the demand for labor is a derived demand. It is derived from the demand of consumers for goods whose production requires the services of workers. The demand for men's clothing, for instance, gives rise to the need for such services as those furnished by cutters, basters, sewers, trimmers, bushelers, and inspectors. A demand for houses gives rise to a demand for such services as those of plumbers, roofers, painters, and glaziers. The employer is somewhat in the position of an intermediary in that he converts the demand of consumers for goods into demands for labor, raw materials, and tools for producing the goods. Expressed differently, the employer buys the service of labor with the intent of selling it by way of the goods in which it becomes embodied.

(b) *Competition of Productive Factors.* Labor is not the only factor required for production. There is also need for land, buildings, materials, machinery, and other equipment. The task of management, as has been seen, is not merely to determine the particular kinds and qualities of these various needed factors, but also the proportions in which the different factors can be coordinated to gain their most economical use. Such use enables the goods to be produced at a minimum cost. If land is expensive in relation to the other factors, less of it will be used than otherwise, although it will be used more intensively. More office, store, and factory space will be obtained by building higher structures, thus conserving land by using more labor and capital. If capital is expensive in relation to labor, more labor and less capital will be employed, while if labor costs are high in relation to those of capital there will be a tendency for more capital and less labor to be employed. Through the process of substitution it becomes possible so to combine the requirements for production as to minimize the total cost of creating goods. The possibility of substituting more of one factor for less of another, or of substituting one grade for another, brings all the productive factors into direct competition. Consequently, the availability of any one factor influences the nature of the demands for the others in producing any particular goods.

(c) *Productivity of Labor.* While the demand for labor is, in a broad sense, a derived demand, the extent to which labor will be used in producing goods of any kind depends on how far employers will find the employment of labor advantageous. Since employers are hiring workers in order to sell the goods in which their services are embodied, there is no reason for employers' using labor beyond the point at which it contributes most to the income of the enterprise. In other words, the productivity of labor influences employers' demand for it.

The productivity of labor involves more than the ability of the workers. The amount of goods produced by workers of any given kind or grade depends on the number of them in relation to the physical facilities with which they are combined or coordinated. For instance, one clerk in a shipping department might cause a serious slowing of production which would both retard manufacturing operations and dissatisfy customers. An additional clerk of the same caliber might more than double the amount of goods which could be shipped in a given time. A third clerk, while further increasing the amount shipped, might not increase that amount by as much as the second, even though both were the same in caliber. Similarly a fourth might enable still more goods to be handled but not as much more as the third. Conceivably clerks might be added to a point at which they were so crowded that less goods would be shipped than if there were fewer clerks. This point is similar to that mentioned in an earlier illustration in which it was shown that additional fertilizer might be added until, instead of increasing the crop yield, it diminished the yield by burning the plants rather than stimulating them. But ordinarily long before this point is reached there is another point, known as the point of diminishing production, after which additional workers contribute less and less to the growth of total production. This diminishing contribution of additional workers is not dependent on the grade of labor employed nor does it come about because the additional workers are less capable than the other workers. It occurs when all workers are of the same grade of efficiency. The diminishing contribution of additional workers

reflects a combination of labor and other productive factors in which the importance of more workers is declining and the importance of more equipment is increasing.

Whatever the quantity of goods may be for which labor is directly responsible, when that labor is coordinated with the other factors of production, the value of the labor service depends on the selling price of the goods in which the service is embodied. It has already been seen that, according to the law of demand, larger quantities of goods can be sold at any given time in a market only if sold at lower prices. Consequently, when total production increases because larger amounts of labor are employed, the selling prices of goods decline on the basis of the demand schedule for them. When the goods which labor has been responsible for producing decline in their power of exchange for other goods, there is automatically a decline in the value of the services embodied in the goods. Thus labor becomes less productive even though the efficiency of performance of the workers remains unchanged.

Since the circumstances under which the workers are employed rather than their individual efficiency are responsible for their declining importance as the size of the group increases in relation to the other productive factors employed, the importance of each worker in the group declines to the level of the last worker added. Any one of the workers might be withdrawn and the total productivity would decline no more than if any other one were withdrawn. The contribution to the total productivity of the last or least important worker added to the group is known as the marginal productivity. It is this productivity which measures the importance of any of the workers in the group, and it is the measure in accordance with which they are paid wages. As the importance of workers declines because their contribution to total productivity is diminishing the maximum wages which employers will pay also declines. Only at lower rates of pay will there be an advantage for employers to use more labor in relation to the same amount of other productive factors. Consequently there will be a tendency for the number of workers sought by employers and the

rates of pay offered to vary inversely for any given kind or grade of labor.

(d) *Advance Payments.* The particular rates at which employers stand ready to hire various quantities of labor are often further influenced by the fact that employers must make payments to labor in advance of selling the goods in which the services of labor are embodied. Seldom can the employer convert the services into cash as soon as they are rendered. The intervening span varies with different spheres of production. In retail business the daily receipts from sales represent in part the recovery of costs incurred that day for the services of the salespeople. In most types of enterprise, however, there are gaps between manufacturing and selling which employers bridge by using their own or borrowed funds. These advance payments are not made gratuitously by employers. The interest on the funds reduces the amount employers can afford to pay for labor, as is true when an individual holds a note for \$100 payable three months in advance. The present value of the labor service is somewhat similar to the present value of a note payable at a future time. Present value is the ultimate value discounted for the intervening period of time. If the holder of the note waits for this period he receives the entire amount; but if he wants cash he must sell the note at a discount rate. Similarly, if workers waited until the goods embodying their services were sold they would receive wages comparable in value to their full productivity. But when workers want payment before the goods they help to produce are sold, the maximum rates which employers offer are the discounted value of the workers' productivity. This does not mean that employers offer different rates depending on how quickly employees want their pay. It means that the interest on the funds required for making advances to labor constitutes a cost which must come out of the selling price of the finished goods, so that it reduces the portion of the selling price which can be attributed to the workers.

*Supply of Labor.* It has already been noted that the availability of labor involves more than the number of workers. Both

the efficiency of workers and the working time affect the quantity of services available. Usually, however, only the number of workers is considered in connection with the labor supply. The relation which exists between the number of workers and the rate of wages depends in part on whether the working population is being considered as a whole or only from the standpoint of those available for particular occupations. The relation is influenced in part also by whether or not the period of time for which the worker is hired is sufficiently long for changes in wages to exert an influence on the natural growth of population.

(a) *Long-Run Supply.* Wages appear to have an influence on the growth of population over a long period of time, but not the influence at one time attributed to them. The famous Subsistence Theory of Wages was based on the view that high wages would cause population to increase and that under low wages population would decline. Any increase in wages above the subsistence level would be absorbed in supporting larger families. This would cause the population to increase more rapidly than other productive agents would increase, with the result that the productivity of labor would fall, as would wages also, below the subsistence level. Then through starvation and disease, the population would be reduced and workers would become scarcer. This would cause their productivity to rise and wages would again increase. With higher wages again the population would expand and cause labor productivity and wages to fall. Consequently, it was thought that wages tended to remain at a subsistence level. The historical experience of a number of countries, on the contrary, indicates that there is a tendency for higher wages to be spent in raising the standard of living for the existing population rather than in raising larger families. Thus, rising wages have existed at the same time that the rate of population growth was declining and, in fact, may exist when population is decreasing.

(b) *Short-Run Supply.* When attention is turned to shorter periods of time several tendencies show themselves. When viewed from the standpoint of the hours of effort the workman

expends, the wages may be different from those when the supply is considered from the standpoint of the proportion of the total population gainfully employed. Furthermore, the situation existing with respect to the general availability of labor is not necessarily the same as for particular occupations.

(1) *Hours of Work.* If the available labor is judged according to the hours of work expected of the laborer, it appears that there is an inverse relation between length of hours and rates of pay. An increase in rates results in a decrease in working time, and a decrease in rates causes an increase in the number of working hours. From a study by Doctor Paul Douglas<sup>1</sup> it appears that with a 1 per cent increase in hourly wages there tends to be a decrease of from one fourth to one third of 1 per cent in the quantity of labor offered, and the same inverse relationship holds when hourly wages decrease by 1 per cent. He found confirmation for the view that workers tend to divide their increase in hourly wages into two parts, one for higher standard of living and another for increased leisure. Approximately two thirds to three fourths of the gain was found to go for the purchase of more goods and from one fourth to one third for more leisure.

(2) *Proportion of Population.* Although available labor is usually viewed in terms of the number of workers rather than in terms of working time, there appears to be a tendency for the proportion of the population which is gainfully employed to vary inversely with wages when other things remain the same. Based on the experience of forty-one cities, Doctor Douglas's analysis indicates that "an increase of \$14.14 in the average real annual earnings was accompanied by a decrease of one person employed in every 1000 of the total standard population." In 1919 it was estimated that a 1 per cent increase in earnings would bring about a .16 per cent decline in the number of workers. These displaced workers are almost entirely children, youths, old people, and women over 25 years of age.

(3) *Particular Occupations.* The actual number of workers available for employment in particular occupations tends to

<sup>1</sup> *The Theory of Wages*, The Macmillan Company. 1934.

vary directly with the rate of wages. There is generally mobility of workers between occupations, although the degree is much greater in some cases than in others. Some persons are reluctant to shift from work with which they are familiar to that with which they are unacquainted, even though they may have the abilities required to perform the new work. They may not find their present work especially attractive, but do not want to put forth the effort nor take chances on trying something new unless there is a considerable incentive in the form of higher wages. Other persons are reluctant to shift into new work because that in which they are now engaged is attractive and gives considerable psychic income, even though the money income may be smaller than could be obtained in some other kind of work which offers higher pay.

The number of persons willing to shift is considerably larger than the number possessing the qualifications for other work. The less skilled the work, the greater the opportunity for mobility. When workers can be broken into a new occupation in a week or so there is no substantial barrier to a large increase in the number available under the stimulus of higher pay. On the other hand, the difficulties become greater as the degree of skill increases. It has been seen that with more skilled work the period required for specialized training may extend from a few months in some trades to several years in others. With sufficient time to permit needed training and experience, the number of available employees even for work requiring the greatest skill is likely to increase considerably in response to higher wages. It is only during periods which are too short for training new workers that the number available is incapable of much expansion, although there is seldom a situation in which no increase can occur until additional workers are trained. Consequently, there is a general tendency for the number of workers in any particular occupation to be greater when the wages increase.

(4) *Point of Balance.* So long as employers are free to decide how much labor of any kind and grade they will employ, and so long as workers are free to decide whether or not they will

accept employment involving that kind of work, the level of wages at any given time will tend to the point at which the number of workers wanted and the number available become balanced. The amount that employers are willing to pay, it has been seen, depends on how much productivity can be gotten from workers, and the number of workers who will offer their services depends on how much compensation they can get in wages from employers. The demand schedule of employers represents the maximum wages they will pay for various quantities of labor, and the supply schedule of workers represents the minimum wages at which various quantities of labor will be available. Under perfect competition, the wage rate tending to prevail for a particular kind and grade of labor would be that at which the marginal productivity of workers in a group of a certain size equals the rate at which a group of the same size is available for employment. If the demand and supply were as represented in Figure 67 the wage rate would be \$4 a day. At a higher wage a larger group would be available and a smaller group sought, while at a lower wage a smaller group would be available and a larger group wanted. Only at \$4 is the number available and the number sought in balance. At this figure the marginal productivity of a group of 6000 workers is equal to the wage rate at which a group of corresponding size is available.

This competitive market wage tends to prevail regardless of the industry in which the work is done. The fact that book-keepers are found in virtually every business does not mean that the forces determining their wages are confined to the par-

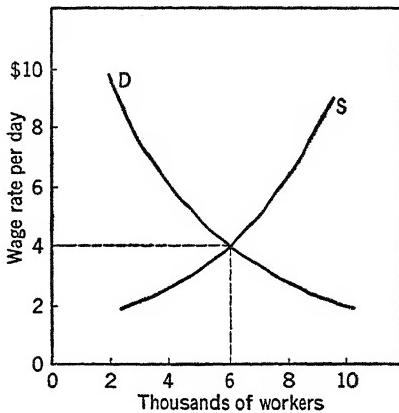


FIGURE 67. DETERMINATION OF COMPETITIVE WAGE RATES

ticular industry in which they are employed. Rather, the forces cut across all industries. Consequently, an increased demand for them among small enterprises which find records necessary for income tax purposes would cause wages in the occupation to be higher not only among the concerns responsible for the increased demand but throughout the entire occupation.

Moreover, the wage tending to prevail in one occupation is the same as that in another from which workers can be drawn and to which workers shift rather quickly. And an increase in demand for workers in one occupation will tend to raise the wages in it as well as in the directly competitive ones, whereas a decreased demand in one occupation will tend to lower the level in the others also. The adjustment between the occupations is not instantaneous, but tends to occur sooner or later depending on the ease with which workers can shift from one occupation to another.

#### B. MODIFYING FORCES

The foregoing analysis may seem to represent a combination of reality and unreality, which is not surprising since the fundamental assumption of the analysis is untrue to an important degree. The assumption is the existence of perfect competition. Such an assumption was necessary to disclose the operation of the basic forces which surrounding circumstances often conceal and check, at least temporarily. The analysis thus far has emphasized the point that wages are fundamentally dependent on the productivity of labor, which hinges on the demand for the goods embodying the services of labor and on the scarcity of labor in relation to the other productive factors. Attention will now be turned to the modifying circumstances of time, place, ability, and bargaining power.

*Time.* Although basic forces operate automatically to establish a balance between the constantly changing conditions of demand and supply, the forces operate slowly, and in the meantime maladjustments exist. For instance, the existence of an automatic balance requires that employers have opportunity

to substitute one kind or grade of labor for another and to substitute other factors for labor so that the various factors will be used most economically and costs reduced to a minimum. But these substitutions cannot be made instantaneously. Similarly, the existence of a balance requires that employees have an opportunity to shift from one employer to another, from one locality to another, and from one kind of work to another, so that they may obtain the most advantageous employment of their abilities. Here, likewise, time is required to look for jobs, decide upon their merits, move to them, or obtain such special training as may be required. In the meantime, workers can be compelled to accept less, or employers can be compelled to pay more, than when enough time has elapsed to permit the influence of substitutions and of shifting to make itself felt. Before a balance is established new changes in demand or supply, or in both, are likely to occur. Consequently a balance is never attained, even though basic forces are constantly pulling in that direction. These maladjustments are prominent among the factors encouraging deliberate control of the forces involved.

*Place.* That wages differ between places is well known. Wages for similar kinds of work tend to be higher in cities than in rural places; higher in some sections of the country than in others. In part, this reflects differences in costs of living. If wages and living costs are both 10 per cent higher at one place than at another, workers in both places are equally well compensated for similar services. However, these differences are not likely to be so great as is sometimes imagined. In 1928 a study of costs of living made by the National Industrial Conference Board showed that among twelve cities (four each of large, medium, and small size) for an industrial worker, his wife, and two children the cost of maintaining a "fair American standard of living" ranged from about \$1660 a year in New York City to \$1442 in Marion, Ohio. Another factor is climate. This is more stimulating in some areas than in others. With a more invigorating climate, workers are enabled to be more active, to produce more, and hence to obtain higher wages than in

areas void of this influence. Then, too, the fact that workers are more effectively organized in some places than in others accounts for some geographical differences in wages.

*Ability.* Only in so far as there is uniformity in the kind of work done and uniformity in the ability to do it would workers necessarily tend to receive the same rate of wages under perfect competition. The conditions of demand and supply of labor for different kinds of work may be such that the same wage tends to prevail. In making full-fashioned hosiery the knitting of stocking legs is a distinctly different type of work from the operating of buffing-wheels in finishing patent leather; yet the United States Bureau of Labor Statistics reports that in 1932 the rate for hourly earnings of male workers in both occupations averaged 63.9 cents. But this does not mean that all the male workers in these occupations received the same pay. In any line of work there is likely to be a fairly distinct predominating wage or one which more workers receive than any other. Workers whose efficiency is above the general level tend to receive higher wages, while those whose efficiency falls below tend to receive less.

However, there is not necessarily a close relation between the wages and the productive ability of workers within a group. For instance, women may do the same work as men, do it equally well, and with equal rapidity and yet receive lower pay. In some work employers encourage workers to remain by recognizing length of service by periodic increases in rate of pay or in the duration of vacations. Within limits there may well be a general tendency to greater productiveness of workers as the length of service with the same employer increases, but the productiveness of individual workers does not increase at such a uniform pace as would, in itself, justify uniform treatment of workers on a length of service basis. Periods of training are often used as the excuse for holding wages below the level which the productivity of workers would justify. This is most conspicuous in the case of physicians serving internships for which they receive only lodging and board. Large enterprises are often able to obtain workers at amazingly low wages with

the promise of promotion as opportunities arise. The prize positions which serve as bait can be attained at best by a negligible proportion of the workers, since these positions are few in relation to the number seeking them and capable of filling them. At the same time, the promise that high positions will be filled from the ranks enables concerns to obtain much of their labor at wages lower than the productivity of the workers would justify.

*Bargaining Power.* An extremely important influence accounting in part for differences in the level of wages between occupational groups and for differences within them is the unequal bargaining power of the contracting parties. It has been seen that under perfect competition the rate of wages tends to the level at which the productivity of a worker in a group equals the wage at which that particular size group is available for employment. In order that this wage shall prevail, there must be unrestricted opportunity for substitution of productive factors by employers and for shifting by workers. Moreover, it is necessary that neither an employer nor a worker be able to exert any noticeable influence on the market. These conditions are far from realized. Especially with giant enterprises a single employer can exert more influence on the labor market than hundreds of others combined, and the influence of any one employer is almost always greater than the influence of any one worker. Under these circumstances there is no assurance that the prevailing wage will correspond more than roughly with the productivity of the workers. Only through organization can the workers hope to match the influence which their employers can exert on the market. And, when in addition to separate employers requiring large numbers of the same kinds of labor, the employers combine and act as a group in labor relations, there is even greater need for organization of labor if workers are to be in a position to exert as much influence on the market as the employers.

There is seldom well-balanced collective bargaining. In general the advantage lies with employers. This is not surprising, since probably not more than 11 per cent of eligible

workers are members of trade or industrial unions. A survey by the United States Bureau of Labor Statistics in 1935 indicated that, excluding the telephone, telegraph, and railroad industries, 43 per cent of the workers in 77 per cent of the establishments covered by the survey bargained individually; 26 per cent of the workers in 20 per cent of the establishments bargained through trade unions; and 20 per cent of the workers in about 4 per cent of the establishments bargained through company unions. The remaining workers were either in trade-union establishments, but not covered by trade-union agreements, or bargained partly through trade and partly through company unions.

The degree of collective bargaining varies widely between industries and establishments of different sizes. Individual bargaining is more pronounced in smaller than in larger establishments, about 85 per cent of the establishments surveyed employing less than 50 workers each, bargained individually with their employees, as compared with 10 per cent of the establishments having 5000 or more workers. None of the employees of the small establishments bargained through company unions, although this was the case with nearly 50 per cent of the large ones. Trade-union bargaining varied from 15 per cent in the largest and smallest establishments to nearly 40 per cent in those employing between 1000 and 2000 workers. In the coal industry virtually all establishments deal with trade unions, while in the retail and wholesale trade groups almost none do so. In telegraph and telephone industries, company unions predominate, with 78 per cent of the workers having this channel for negotiations, while in Class I railroads the trade union predominates, covering 71 per cent of the workers.

It may be recalled that one of the purposes of the National Labor Relations Act of 1935 was to enable workers to bargain on a more nearly equal basis with employers. The act not only asserted the right of workers to organize in such a way as they saw fit, but declared certain acts of employers to constitute "unfair labor practices." These included interfering

with the organization of workers and refusing to bargain with the representatives chosen by the employees. Moreover, the Act provided for a National Labor Relations Board to assist in settling disputes and in guaranteeing the right of collective bargaining.

Even though under existing conditions collective bargaining is essential to assure workers of a wage corresponding to their productivity, such bargaining may create maladjustments or intensify existing ones. The power of a strong union to get higher wages is not also the power to compel employers to hire the same number of workers at a higher rate of pay. An example of this occurred in the bituminous coal industry following the famous Jacksonville Agreement, in which the union had operators temporarily at its mercy. Another instance occurred during the 1929 depression when the resistance of organized labor to reduction in wage rates contributed to unemployment more than would otherwise have occurred. Then, too, the power of the union seldom extends to a control over the methods of production, with the result that although employers can be compelled to pay higher rates temporarily, there is likely to be increased substitution of other productive factors for the high-priced labor. This substitution increases unemployment in the union and weakens its bargaining power. Through unnecessarily high restrictions on membership, a union may develop monopoly power which can be used to the advantage of some of its members at the expense of other members and of workers in less effectively organized occupations or trades. When a union is able to get higher wages or maintain existing wages only through the unemployment of some of its members, those who retain employment at the higher wages gain at the expense of the unemployed. These seek jobs in other occupations, usually those in which labor is less effectively organized or without organization. By increasing the number in such occupations, with no change in demand, wages therein are depressed. Thus higher wages in monopolized occupations contribute to lower wages in competitive types of work.

**C. METHODS OF COMPENSATION**

Under a system of business organized for private gain the chief compensation to workers is in the form of money payments. Other incentives may also exist, such as prestige, authority, privilege, and the opportunity to acquire experience. But at least for the rank and file of workers these incentives have limited possibilities compared with wages. In the attempt to reduce costs through stimulation of production, various methods of compensation have come into use. Some of the methods provide a more direct connection between the accomplishment of individual workers and their compensation than do other methods. The leading bases for payment are time, piece, bonus, and profit-sharing.

*Time.* For some kinds of work the straight time method of payment is used most widely. It is particularly well suited for work which, even though routine, is not easily measured, or when the variations in accomplishment of different workers are likely to be too small to warrant measurement of individual results. The payment of common labor on an hourly or daily basis, of clerical workers on a weekly or monthly basis, and of executives on a yearly basis are instances which fall within this category.

*Piece.* When work is of highly standardized and repetitive nature or when the nature of the work is such that employees are given considerable freedom as to how strenuously they want to work, the piece method of wage payment usually operates as an automatic stimulus. When farm hands are given 5 cents a shock for husking corn, or factory workers are paid by the gross for folding handkerchiefs, the per unit labor cost to the employer may be much the same for both fast and slow workers, although more money is paid to those who are fast. Salesmen often operate entirely on a commission basis, in which case the method of compensation is essentially a piece method. For the successful operation of this method, the amount of production or volume of business must be mainly within the control of the individual worker. If a factory worker has to lose time waiting for necessary materials and supplies, a piece

method of payment is likely to breed dissatisfaction. When the conditions surrounding the performance of work are partly beyond the worker's control, there is often a guaranteed minimum payment per hour, week, or month. A survey in 1935 by the National Industrial Conference Board indicated that about half the manufacturing concerns covered used a piece method of wage payment to some extent.

*Bonus.* Compensation for accomplishing certain results may take the form of bonus payments. This method of compensation is often applied to executives as well as to the rank and file of workers. According to the survey just mentioned, about one third of the concerns used some bonus or premium method of payment. The accomplishments for which bonus payments were made included not only production, but regular attendance, offering useful suggestions, and length of service. Such financial incentives were found in the automobile, chemical, iron and steel, and rubber industries.

In manufacturing establishments there are wide variations in the arrangements by which bonus payments for production are determined. The payments may accrue as soon as a standard of performance has been achieved or they may depend on surpassing the standard; sometimes the standard is set for the average worker, although it may be set for workers either below or above average; sometimes the bonus rate is high and sometimes it is low. A comparatively simple plan might provide remuneration depending on a straight time base and a bonus rate of 50 per cent. Suppose the standard time for a job is four hours and the worker's basic rate of pay is 60 cents an hour. If more than four hours is required the worker would be paid for the straight or actual time consumed at sixty cents an hour. If the job were done in, say, three hours, the worker would be paid 60 cents an hour for time consumed, or \$1.80, and in addition would receive credit for 50 per cent of the time saved, or one half hour, which at his basic rate would be 30 cents. His total compensation would therefore be \$2.10, or an average of 70 cents an hour for the time actually consumed in performing the job.

Bonus payments for executives have come to be quite extensive. Not only major executives but minor ones as well are likely to receive a part of their compensation in this form. In some cases the bonus is based on economies made within a department or branch of the business. For those in charge of sales the payment is likely to be based on the volume of sales. But in most cases the bonus is based on the earnings of the enterprise and may therefore be more properly considered as profit sharing.

*Profit Sharing.* The original purpose of profit sharing was to furnish management with an incentive to increase the profits of the business. As long as enterprises were fairly small and were managed by the owners there was no need for such an incentive. When, however, enterprises increased in size so that important responsibilities had to be delegated to employees, or when the owners withdrew from active management, there was need for an incentive to stimulate the efficiency of those responsible for the conduct of the business. Since the purpose of the enterprise was to make profits, and since the amount of profits was largely in the hands of management, the logical incentive was to share profits. As the ownership of enterprises spread into the hands of more persons and as control came into the hands of fewer persons, the way was opened for those on the inside virtually to decide their own compensation and then refuse to tell the owners how much of the earnings were being drained off in profit-sharing bonuses. Instances of fabulous bonuses have been given in an earlier chapter.<sup>1</sup>

Profit sharing may also extend to the rank and file of workers. For a number of years some concerns, mostly prosperous and comparatively small ones, have made payments to workers, usually at Christmas time, in excess of contracted wages. Not until 1936 did a number of large concerns, following the lead of General Motors Corporation, declare "wage dividends" at the same time or before dividends on stock. Such payments can scarcely be explained on the basis of stimulating efficiency,

<sup>1</sup> See Chapter IX.

since the amount received by each worker is too small and uncertain to act as an effective spur to individual efficiency. A more likely explanation is that the payments are intended to create good-will and to reduce criticism of large corporate earnings. Only under exceptional circumstances would such sharing be used to reduce corporate taxes.

## II. MONEY AND REAL WAGES

### A. WAGES AS COSTS

Whatever the method of compensation may be, the amount of money actually paid constitutes a cost of production, and there has been considerable controversy as to whether or not high wages result in high costs. If such is the case, higher wages can be obtained only by drawing them either from profits or from consumers in the form of higher selling prices. There may be good reasons in some cases why higher wages should be drawn from either or both these sources, but the issue is whether or not high wages necessarily mean high costs of production. The answer to this issue depends on what is meant by costs of production. Any increase in wage payments necessarily increases the total money costs of production. Whether the payments are made in the form of a bonus or of a flat wage, aggregate costs are increased. But the real, or per-unit, cost depends on how much is produced in exchange for the money payment. It is quite possible that both high and low wages may result in the same per-unit costs. If a worker receiving \$1 an hour produces twice as much as one receiving 50 cents, the unit, or real, cost to the employer is the same.<sup>1</sup> Only when the increase in output is proportionately smaller than the increase in money wage do real costs increase.

The fact that higher wages do not necessarily mean higher real costs nor lower wages lower costs furnishes the key to some wage paradoxes. It explains, for example, how some concerns paying high wages can compete successfully with enterprises

<sup>1</sup> Real costs sometimes refer to what has been designated as human or basic costs in Chapter XVII, but the expression is not used here in that sense.

paying low wages. It also explains some of the fear which Americans have of the low wages of Oriental labor and the fear which Orientals have of the high wages of American labor. Neither has any justification for his fears as long as the difference in money wages results in approximately equal real costs.

However, there is likely to be less opportunity for incentive wages to stimulate increased production than is often assumed. This is especially so with manual labor. The phenomenal results which may accompany contests are sometimes interpreted as showing the possibilities for increased production under adequate stimulus. The rate at which a runner can run half a mile is no indication of the rate at which he can run five miles. Similarly with workers; the rate at which production can be done under pressure is no indication of the rate at which production can be sustained day in and day out. In the performance of many tasks the speed of machinery sets the speed at which the employees work, so that under such circumstances there is likely to be even less opportunity for incentive wage plans to stimulate production than in such jobs as laying bricks or riveting.

#### B. WAGES AS INCOME

*Trend of Money Wages.* The general course of money wages, as estimated by the Federal Reserve Bank of New York, is shown in Figure 68. This composite index contains wide sampling of wages and includes wages of factory workers, coal-miners, railroad employees, building workers, teachers, farm-hands, employees of public utilities, and employees of retail establishments. From 1820 until 1913 wages had increased slightly less than fourfold, the index number rising from 28 to 100, but in 1920 money wages had increased nearly tenfold over 1820 and more than doubled their 1913 level. After a temporary setback following 1920, wages again rose to still higher levels by 1929 and then took a sharp and drastic fall, but remained considerably above the pre-war level. It will be realized that many divergent tendencies are combined in the general course. Industrial wages are notoriously higher

than agricultural wages; union wages higher than non-union compensation. If groups of either union or non-union workers are considered, it is apparent that wages in some occupations are higher than in others; for some groups wages may be

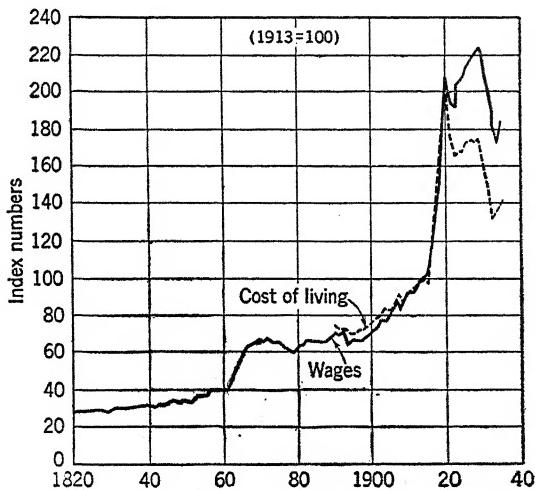


FIGURE 68. WAGES AND COST OF LIVING

Based on Composite Wage Index of the Federal Reserve Bank of New York; cost of living index from *Real Wages in the United States, 1890-1926*, by Douglas, published by Houghton Mifflin Company, and from *Monthly Labor Review* of the United States Bureau of Labor Statistics for period since 1926.

decreasing at the same time that they are increasing for others, and in either case the changes may be faster for some than for others.

(a) *Wage Rates.* Money wages frequently refer to wage rates or the scale of compensation on which workers are paid. For most workers who are paid according to the time consumed in performing services, the unit for measuring the service is the hour, although for clerical workers a weekly rate of pay is not unusual. With incentive methods of payment, or those which relate compensation very directly to work accomplished, rather than merely to the time spent in performing the work, the scale of compensation is expressed in a variety of units. Salespersons are often paid a percentage of their sales and factory workers are often paid on a piece basis. Such rates are sometimes

called base or nominal rates in that they are used in computing the amount of compensation for a job or a pay period. When the amount of compensation which base or nominal rates furnish is expressed in terms of a unit of time, such as an hour, the resulting rate is said to be an earned rate. In the preceding illustration of a simple bonus plan, the base rate was 60 cents an hour, but when the bonus payment was included the average earned rate per hour in performing the job was 70 cents. In making wage comparisons of rates, the earned rates are usually more significant than the base rates. It will be realized that when workers are paid according to time spent the base and earned rates are the same.

(b) *Money Earnings.* Both for rates of pay and for money earnings some period of time is involved, but the period is shorter when used to express a rate than when used to indicate earnings. Most frequently rates are expressed on an hourly basis and earnings on a weekly basis, although there may be weekly rates and yearly earnings. The usual idea conveyed by earnings is that of the amount received in the pay envelope. This amount is influenced not only by the rate which the worker receives when he is working but also by his opportunity to work.

The variations in opportunities to work for which allowance must be made in comparing wages are those resulting from differences in the normal working time and for departures of actual working time from the normal. Professor Douglas has estimated that for industry as a whole the normal time declined from 58.4 to 49.8 hours a week between 1890 and 1926. Since then, further declines have occurred. Unless reductions in normal time are offset by higher basic rates of pay, full-time weekly earnings tend to decline. If a plant shifts from a 50-hour to a 48-hour week, with no adjustment in base rates, a worker whose base rate was 60 cents an hour would find his earnings for a full week's work reduced from \$30 to \$28.80.

Even more serious in affecting earnings than changes in normal time are the variations between actual and normal hours. In periods of active business overtime is likely to

increase, and with it earnings tend to rise, while in periods of inactive business short time develops, and earnings decline without any necessary change in the basic rate of pay. The fact that a worker may be paid \$1 an hour when he works and may be employed by a concern whose normal time is 50 hours, does not prevent his actual weekly earning from declining to \$5 if, because of slack business, he has an opportunity to work only 5 hours a week. Generally there is more variation in the actual earnings of individual workers and in the payrolls of individual establishments than is the case for groups of workers and for entire industries. However, seasonal influences affect entire industries, and business cycles spread their influence over many industries.

Comparisons based on weekly earnings are most prevalent and are satisfactory for some purposes. The method by which the Federal Reserve Bank of New York computes the composite index of wages suggests that it reflects weekly or monthly compensation rather than hourly rates or yearly earnings. Nevertheless, although earnings may cover any period of time, there is increasing attention being given to yearly earnings. Professor Douglas estimates <sup>1</sup> that for all industries, including agriculture, the average annual earnings increased from \$438 in 1890 to \$1405 in 1928. A study has also been made of yearly wages covering the state of Ohio for the years 1918 to 1932. For overlapping years the results of the two studies usually vary by less than \$50. However, this difference is sufficient to make uncertain whether annual earnings were higher in 1929 than in 1920. Douglas's figures suggest that they were probably higher, but this is not confirmed by the Ohio figures. At best, it appears from the Ohio data that yearly earnings in 1929 were not substantially above their 1920 peak and then declined to \$1050 in 1932.

*Real Wages.* Whereas the real wage costs to employers depend on how much they get in exchange for the money they pay, the real incomes of workers depend on how much they must pay for the goods they buy with their money earnings.

<sup>1</sup> *Real Wages in the United States: 1890 to 1926.* Houghton Mifflin Company. 1930.

ings. When changes are occurring in the cost of living, the money earnings do not reflect the real income or the purchasing power of the money earnings. This showed itself very conspicuously during the World War period when money wages more than doubled. During the same period real earnings scarcely increased at all. The Douglas estimates indicate that the purchasing power of hourly, full-time weekly, and annual money wages was only 5, 3, and 6 per cent higher, respectively, in 1920 than in 1914 and only 9, 3, and 10 per cent higher than the average for the ten years (1890-99) prior to the turn of the century. It is evident that the phenomenal increase in money wages during the World War was largely an illusion when allowance is made for changes in the cost of living. Most of the gains in real income of workers occurred between 1920 and 1929. By 1929 real incomes are estimated to have been 30 or 35 per cent above their pre-war level. For those who continued to have full-time work during the depression of 1929, real income increased, as is usually the case for such individuals during depressions since wage rates tend to decline more slowly than living costs as a whole. When the unemployed and partly employed are taken into account, a severe decline occurred in real yearly incomes of the working population during the depression.

### III. ALLIED COMPENSATION

Through a combination of humanitarian considerations and of economic pressure increasing attention has been paid to types of compensation allied to wages, at least in the sense that they take the place of wages when inability to work takes the place of ability to do so. Compensation of this kind arises in connection with industrial accidents and sickness, unemployment, and old age. European countries made provisions for these events long before sufficient pressure developed in this country for similar provisions.

*Compensation for Industrial Accident and Disease.* It has been seen that a part of the cost of producing goods is the pay-

ment made for physical injury sustained by workers in the course of their employment. Only about a quarter of a century ago most injured workers received less consideration than if the injury had occurred to animals. This was not surprising since most employers considered that they had no obligation to workers beyond the agreed-upon wage. Other employers who recognized the need for compensation to injured workers were often not in a competitive position to provide it unless rival employers were compelled to do likewise. There is at present, however, much greater prevalence of workmen's compensation. In 1936 all states except Arkansas and Mississippi had workmen's compensation laws of some kind. Most legislation in this direction has been created by the state governments, since the only workers aside from government employees who come under the jurisdiction of the Federal Government are those engaged in interstate commerce, and for these the Federal Government has done nothing except in the case of longshoremen. The workers usually not covered by state regulations are farm-hands and domestic servants, although in some states the law applies only to those engaged in occupations designated as hazardous. In only a few states are employers compelled to accept and abide by the provisions of the compensation laws. As an inducement to voluntary acceptance of these provisions, the laws remove the former customary defenses which employers used when sued by injured workers or their dependents; namely, negligence of a fellow servant rather than of the employer, or the assertion that the worker voluntarily assumed the risk and that he contributed to the accident by his own negligence.

Payments to workers under compensation laws vary quite widely among the states. For disability, there is usually a waiting period, ranging from three to fourteen days, for which the injured worker is not compensated. The amount he receives per week generally runs from 50 to 66½ per cent of his regular wages, with a maximum in most states of from \$10 to \$15 and minimums of from \$5 to \$8. The length of time the weekly payments continue is likely to depend partly on

whether the injury is permanent, as with the loss of an eye, or temporary, as with a cut hand, and partly on whether the disability incapacitates the worker partially or completely for following his usual occupation. In the event of fatal injury, the amount payable for the care of dependents usually falls within the same maximum and minimum amounts per week as for non-fatal injury. Although some states provide for widows so long as they do not remarry and for children until they attain specified ages, most laws provide a maximum number of weeks, running from 260 in Vermont to 500 in New Jersey and Massachusetts, during which payment is made. In some cases claims arising through death or permanent injury of a worker may be settled by a lump sum payment rather than by weekly installments.

Less provision is made for occupational diseases than for accidents. One of the diseases sometimes provided for is anthrax, an infection contracted mainly in the tanning of leather and in the handling of wool. In the "dusty trades," miners' asthma and silicosis result from the accumulation of dust in the lungs. Those coming in contact with cadmium, carbon tetrachloride, or ethylene oxide may be poisoned by fumes from these chemicals. In 1924 a new occupational disease developed in the radium-dial painting trade. Since then, radioactive substances have been found to cause malignant growths. Compensation for occupational diseases is provided for in only twelve states. In the others, such disability is either expressly excluded in the workmen's compensation laws or has been excluded by interpretation of the courts. This wholly inadequate provision is due partly to the difficulties of determining the particular employer whose work was responsible for the disease, and partly to the difficulties of determining whether the disease was contracted in the course of employment or in some other way.

Financial responsibility for providing compensation in the event of industrial accident or disease rests entirely on employers. Neither the worker nor the government makes contributions to the compensation received by the disabled worker

or by the dependents of the worker whose death results from accident or disease. In making provision for the compensation, employers may purchase insurance covering the obligation. In only a few states is the furnishing of compensation insurance a government monopoly. Most states providing such insurance do so on a competitive basis with private companies. Employers are usually not required to purchase insurance if they can give adequate assurance, by the deposit of surety bonds or otherwise, that they will be able to meet any obligation for compensation. When concerns carry insurance, their rates for premiums are based partly on the general experience of the particular business in which the concerns are engaged, and partly on their own individual experience if it differs distinctly from that of the industry generally. Whatever the rate may be, it is usually applied to the amount of the payrolls, since this reflects the degree to which the concern is exposed to compensation claims. In those businesses incurring slight risk, the premium may be only 6 cents per \$100 of payroll, while in those incurring more risk, a premium of \$25 may be required.

*Compensation for Unemployment.* Prior to 1935 there was virtually no unemployment compensation in this country. Private plans had been established by a few concerns such as the Dennison Manufacturing Company (1916), Leeds and Northrup (1923), and the General Electric Company (1930). Wisconsin was the first state (1932) to enact legislation of this nature. By the Federal Social Security Act of 1935 provision was made for unemployment compensation on a national scale, although the Supreme Court may declare the act unconstitutional in whole or in part. According to the provisions of the act, workers are not compensated by the Federal Government, but with its financial assistance; that is, states providing plans which meet standards established by the Federal Government are to be granted federal subsidies. Beginning in 1936, funds for the subsidies are furnished by taxes imposed on employers, who are required to pay amounts equal to 1 per cent of their payrolls. The rate increases 1 per cent each year to a maximum

of 3 per cent in 1938. In the event that employers make contributions to an unemployment fund under a state law, they are allowed a credit on their federal tax up to 90 per cent of the amount they have contributed under the state law. Employers of farm laborers and of domestic servants are excluded from the plan, as are also employers with less than eight workers for less than twenty days of the calendar year. During 1935 only eight states enacted unemployment insurance laws.

*Old Age Compensation.* On a very limited scale and on a highly restricted basis, pensioning of workers has occurred for some years in this country. In addition to pensions paid by labor organizations, there have been those paid by private employers and more recently those made by governmental agencies. Under these plans no large proportion of workers obtained economic protection in old age. Moreover, the plans of private employers embody several serious weaknesses. In the quest for private gain employers cannot be expected to pay pensions without receiving something in exchange, and such advantages as employers seek usually involve unduly heavy sacrifices on the part of workers. As a rule, employees are eligible for retirement only after they have been in the service of the employer who pays the pension for a fairly long period of years. This serves to restrict the mobility of labor and often enables employers to obtain workers at lower wages than would otherwise be possible. The workers under such circumstances are in reality providing their own pensions. There might be adequate justification for workers to contribute to their pensions if three conditions existed: that they know how much they are contributing; that their contribution accompanies them wherever they work; and that the employers' solvency is assured. These conditions are not met by voluntary pension plans. Moreover, the amount of the pension generally is determined by the employer alone, and not infrequently he can withhold or grant a pension as he sees fit. In the event that an employer causes all his workers to retire at a designated age, there will be a tendency for him not to hire workers who will

soon be eligible for retirement and to dismiss some before they reach the retirement age.

Only within recent years have governments begun making provision for old age pensions to their citizens who can no longer work and who have inadequate means for supporting themselves. The payments were essentially a type of charity, and served to minimize begging and the need for institutional care such as that furnished by poorhouses. The first state pension legislation was provided by Montana in 1923. Very little headway was made in other states until 1930. By 1935, about 39 states had made some provision for pensions. The payments averaged \$14.68 a month in 1934 for the states having pension legislation at that time, although the averages for individual states varied from 69 cents in North Dakota to \$26.08 in Massachusetts.

The most extensive provision for old age is furnished by the previously mentioned Federal Social Security Act. Part of the provision is for old age "assistance," or relief to the aged who are in need. This assistance is offered in the form of a subsidy to the states which grant pensions to those aged persons who have not contributed to any fund from which their pensions are derived. For such relief, the Federal Government matches the state contribution up to a maximum of \$15 a month per individual receiving aid, plus certain allowances for administrative costs. Additional provision is made for an old age "annuity" system in accordance with which persons having no regular employment and having attained the age of 65 years may obtain, beginning in 1942, a pension not exceeding \$85 a month. To obtain funds for financing this arrangement, taxes are levied equally on employers and employees. Beginning in 1937 workers receiving wages up to \$3000 will be required to pay 1 per cent of their earnings into a fund from which subsequently they will be entitled to pensions, regardless of any other income they may have after they retire. The tax rate increases one-half of 1 per cent every three years until a maximum of 3 per cent is reached in 1949. Employers are responsible for deducting this tax from the wages of the workers and for remit-

ting it to the Federal Government. At the same time employers pay a tax equal to the total payment made by employees for this purpose. After current withdrawals have been met, the funds are to be invested by the United States Treasury in securities of the Federal Government which yield not less than 3 per cent interest. The workers not qualified under this old age annuity plan include farm-workers, domestic servants, employees of governmental agencies, and employees of non-profit-making enterprises.<sup>1</sup> Whether or not this plan will go into operation depends on the Supreme Court's decision on its constitutionality.

#### QUESTIONS

1. In what sense is the demand for labor a derived demand?
2. "Labor is not in competition with all the other factors of production because when a concern wants workers it does not want capital, nor any other factor of production." Evaluate.
3. "The productivity of labor involves more than the ability of workers." Explain this statement, pointing out what beside ability affects productivity of workers.
4. What is meant by marginal productivity of labor?
5. What reason, if any, is there to believe that making advance payments to workers affects the amount of wages?
6. "Wages influence the availability of labor differently in the long run than in the short run." Explain.
7. "The competitive wage which established a balance in the labor market is the highest wage employers will pay and the lowest wage employees will accept." Is this statement valid? Explain.
8. "Wages in one line of employment affect wages in other lines." Explain.
9. How does the element of time affect the operation of basic forces in the determination of wages?
10. What circumstances account for differences in wages as between localities, and is there reason to believe these differences persist over a fairly long span of time?
11. "Equal wages in different lines of work reflect equal ability and differences in wages for the same line of work reflect unequal ability." Criticize this statement, pointing out how, if at all, wages are related to ability of workers.

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<sup>1</sup> It is likely that during 1937 the Act may be modified to enlarge the number of protected workers with respect to the method of financing annuity payments.

12. Does an examination of the forces which determine wages throw any light on the weakness of the company union as a device for collective bargaining?
13. "Any means by which higher wages can be secured in one craft or trade group not only benefits that group but also benefits other groups indirectly." Evaluate this statement.
14. Explain the leading methods of wage payment and point out some of the circumstances under which each is particularly useful.
15. "High wages stimulate efficiency." Evaluate.
16. Distinguish between rates of pay and money earnings and point out some of the circumstances which make this distinction important for wage compensation.
17. "Just as real wage costs are of paramount importance to employers, so real wage income is of similar importance to the employee." Explain, and point out the difference between real and money wages.
18. Is there any economic reason why the employer should bear full financial responsibility for compensation to workers in the event of industrial accident and sickness?
19. Point out the weaknesses encountered with private plans for providing old age compensation.
20. Does it appear to you that private plans for unemployment insurance possess the same weaknesses as do private plans for old age compensation?

## CHAPTER XXIII

### INTEREST

ALTHOUGH the largest share of the national income is distributed as wages for the services which individuals personally perform, a part is distributed to individuals as compensation for the use of the things they possess. This constitutes property income, one form of which is interest. In this chapter particular emphasis will be placed on the interest resulting from the borrowing and lending of funds.

#### I. REASONS FOR INTEREST PAYMENTS

Interest payments have come to be so widely accepted as a matter of course that the circumstances under which they are necessary are often overlooked. Consequently, it will be well to notice briefly the conditions which give rise to such payments.

##### A. USEFULNESS OF LENDABLE FUNDS

The explanation of the willingness, and usually, also, the ability, on the part of borrowers to pay interest is found in the usefulness of funds to them. The fact that the funds may be useful to the borrower does not necessarily mean that they will be employed in ways which will be beneficial to society. Some of the uses to which they are put contribute directly to the greater prosperity of society as a whole. Other funds are essential only when productive wealth is privately owned and these cannot, therefore, be said to be universally essential. Still other uses may even retard general prosperity. In any case, so long as borrowers expect to derive benefits from the money, they are willing to pay a price for the use of lendable funds. The following sections will treat several conditions under which benefits may be realized from loans.

*Financing Production.* The main use for funds is for financ-

ing business enterprises, and particularly for the creation of capital. Most goods are produced in anticipation of demand. It has been seen in connection with wages that workers are not in a position to wait for their compensation until the goods which embody their services are sold. Employers must make advance payments. Moreover, it has been seen that the modern process of production is indirect. Time is required for the creation of capital. During the time that capital is being created, provision must be made for supporting those whose efforts will not mature into consumable goods for some time in the future. A telephone company may see an opportunity for obtaining more income through an extension of its lines. To this end it orders poles and other necessary materials. The concerns furnishing these are not ordinarily in a position to wait for payment until the line is completed. Even then these materials will not have, as yet, contributed to any services which furnish income for their payment. Such services and income develop gradually as the poles, wire, etc., are used in sending messages, but, long before this, someone has been responsible for furnishing funds to pay for the materials. These advance payments are made in the expectation that income from additional communication service will provide the monetary means for reimbursing those whose funds made possible the advance payments.

*Financing Consumption.* Loans to consumers are not new. They were made in antiquity, and the high rates of interest then charged contributed to the disrepute of moneylending. But the loans made formerly to finance consumption were usually made to persons in distress, so that in this respect they stood in sharp contrast to most modern loans extended for financing consumption on the "installment plan." Here, too, the element of time enters. Some consumable goods are durable and yield their benefits only over a period of time. When, therefore, cash is paid for such goods, the purchasers are making payments for benefits in advance of the time at which some of the benefits are received. Frequently purchasers are not in a position to make the advance payments, and turn to others

who have available funds. The purchase of homes has long been financed by loans, while the growth of loans to consumers for financing the purchase of automobiles, jewelry, and similar articles is of more recent origin. Advertising and other sales pressure to "Buy Now; Pay As You Earn" has contributed greatly to increase the financing of consumption.

*Acquiring Natural Resources.* Under a system of private ownership of land, the usual method for acquiring possession of natural resources is by purchase or by inheritance. For the purchase of land, funds are borrowed extensively. Whether or not funds used in this way can be considered as being employed productively will be examined in the following chapter. In any case, the purchasers of land usually expect the total income derived from the land to more than equal the purchase price over a period of years.

*Financing Speculation.* Since the prices of commodities and securities rise and fall from time to time, there develops an opportunity to gain through trading in expectation of price changes. Such activity is known as speculation and has been seen to exert an important influence on the business cycle. To aid transactions of this kind organized exchanges have come into existence. Whether or not speculation is conducted under such conditions and limits as to make its results beneficial to society, those who engage in it usually do not operate on their own funds entirely, but rather rely heavily on borrowed funds.

*Government Financing.* Governmental agencies frequently borrow in order to finance some of their activities, but the extent to which these agencies furnish opportunities for investment is ordinarily small in comparison with that of private corporations. At times, however, the situation is reversed. This is illustrated by Figure 69, which compares corporate and government security issues for the period 1926-1934. The figures compiled by the National Industrial Conference Board include the issues of federal, state, and local governments but exclude refunding issues and do not include the issues of investment trusts and holding companies. Immediately prior to 1929 governmental borrowing was rather inconsequential.

But following 1929, the corporate demand for funds fell sharply and by 1934 was only 2.5 per cent of its 1929 level, although governmental borrowing had increased 1057 per cent during the same period.

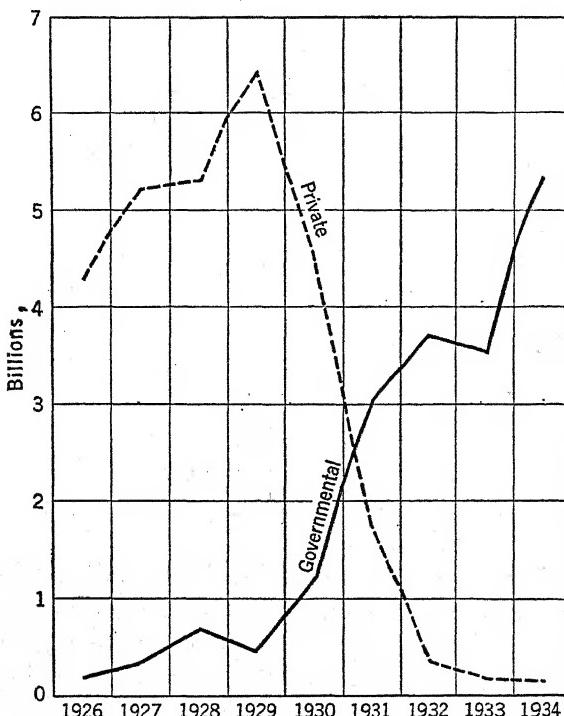


FIGURE 69. PRIVATE AND GOVERNMENTAL SECURITY ISSUES  
From Cleveland Trust Company Bulletin.

#### B. SCARCITY OF LENDABLE FUNDS

The usefulness of funds is only a partial explanation for paying interest. It explains the willingness of borrowers, and generally accounts also for their ability, to make payment. Neither lendable funds nor anything else can command a price merely because they are useful, as is illustrated in the case of air. Only when usefulness is coupled with scarcity must payments be made. The necessity for interest arises out of the

scarcity of lendable funds. This in turn hinges on the resistance encountered in obtaining savings.

*Personal Savings.* In 1929 family savings were estimated by Brookings Institution to be 15.1 billion dollars, with perhaps 2.6 billion additional furnished by unattached individuals. The total personal savings of nearly 18 billion dollars constituted about 20 per cent of the national income received. The percentage of saved income is about the same for farming as for non-farming families, although the savings of the former amounted to 1.4 billion dollars as compared with 13.7 for the latter.

(a) *Sacrifices.* These savings were not forthcoming without considerable sacrifice. For the vast majority of individuals who save, spending is vastly more attractive than saving. Except for the relatively few persons who are extremely wealthy, human needs and desires for consumable goods are so large in relation to available income that if their entire income were spent there would still be unsatisfied wants. Any savings which occur under such circumstances involve at least some sacrifice in that there must be postponement of present for future consumption.

Among those to whom saving involves sacrifice, the degree of sacrifice depends partly on the size of the individual income and partly on the obligations which must be met with the income. If other things are equal, the sacrifice declines as the size of the income increases. A dollar is more important to a person who has only 1000 of them in a year than to a person who has 10,000 of them. Just as a tip of 50 cents may impose no greater burden on the income of one person than a tip of 5 cents imposes on that of another, so the sacrifice of saving \$500 may be no greater for the one than is that of saving \$50 for the other. Often, however, other things are not equal. Some individuals have families and others have not; some families are large and others are small; some individuals are healthy and spend almost nothing for medical attention, while others are sickly and spend much of their income for the services of physicians; some parents seek to give their children great

advantages, while others give few advantages. When differences exist in the obligations which must be met, the size of the income is not necessarily indicative of the sacrifice which saving involves.

(b) *Automatic Savings.* Under some circumstances, savings are automatic in the sense that they occur without any regard to the rate of interest as a stimulus. This is probably the case with most individuals with small incomes. Their inducement to save is the satisfaction of having something for a "rainy day" or for some other future event such as burial, education of children, or a vacation. Weekly or monthly sums are set aside through such facilities as savings accounts, insurance premiums, or building and loan association dues. Also there are the automatic savings of the wealthy, some of whom save because saving is easier than spending. Whatever amount is not wanted for consumption is invested. Not infrequently the wealthy are prompted to save by the desire to acquire power and prestige. Although the interest rate is of no importance as a stimulus to them, it does affect the amount they are able to save since most of their income is generally derived from interest payments. The higher the rate of interest, the larger their income and the more they can save. Consequently, despite the fact that the savings of the rich may be automatic, they are likely to vary directly with the interest rate.

(c) *Non-Automatic Savings.* Not only does the interest rate affect the amount which some individuals can save, but it may affect the amount they choose to save. The way in which the interest rate will affect such savings depends somewhat on how much importance the savers attach to the future as compared with the present. Some persons who are in a position to save are so anxious to satisfy their immediate wants, be they ever so trivial, that they have no inclination to give any thought to the future. Their slogans are: "Sufficient unto the day is the evil thereof," and "Live today and die tomorrow." With such a view of the future, no interest rate within the range of reason would induce them to save anything. With

others, there is merely a tendency to give more thought to the present than to the future. At least beyond a certain point, they would not save a dollar now merely to have a dollar at some future time; but, if they could save a dollar now and have more than a dollar in the future, this would serve as an incentive for further saving. The more importance individuals attach to their future needs, the lower is the interest rate which induces a given quantity of savings; the less they are inclined to provide for the future, the higher must be the rate which will prompt a given amount of saving.

Then, too, there is the uncertainty of life itself. In so far as individuals have occasion to consider only themselves, or do in fact consider only themselves, the uncertainty that they will live to enjoy their savings in the future influences their willingness to save. The greater the uncertainty that future benefits will be realized, the less the inclination to save, and, therefore, the higher must be the interest rate to bring forth savings; while with less uncertainty there will be greater willingness to save, and a lower interest rate will suffice to stimulate the same amount of savings. Suppose at present, with compound interest, savings double in face value every fifteen years. If the interest rate were higher so that savings would double in ten years, there is at least greater certainty of individuals living to enjoy their savings and larger savings might be forthcoming. Were the interest rate lower, so that twenty years were required to derive the same benefits, there would be greater uncertainty of life for this period and less incentive to save. In such instances, the amount of savings tends to vary directly with the interest rate.

A different relation might exist under some circumstances. Suppose the individual has set a goal of \$20,000 on which he wants to retire by a certain age. With compound interest, the amount he needs to save monthly to achieve his goal would be greater with a lower than with a higher rate of interest. Consequently, there might be an inverse relation between the amount of savings and the rate of interest. Or an individual might not have any particular amount which he sought to

accumulate, but wanted to save enough by a certain age to yield him or his family a yearly income of \$2500. Again the amount he would need to save would be less at a higher than at a lower interest rate, so that again the amount of savings would vary inversely with the rate of interest.

Not only may the rate of interest affect the amount which individuals save, but also it will affect their inclination to consume that which they have saved. This is especially likely when persons have saved for retirement or old age and are not interested in leaving an estate. Suppose an individual has saved \$60,000 with the expectation of living thirty years. If compound interest be disregarded for the sake of simplicity, he could spend \$2000 of his savings each year and if he died at the end of thirty years would have completely consumed his savings by that time. With a rate of interest not less than  $3\frac{1}{3}$  per cent, his yearly interest would be as much as he would have by consuming one thirtieth of his principal. But if the rate of interest fell below this level, he would have more spending power by consuming a part of his income. There is, of course, the danger that he might live longer than expected, in which case he would have no income for the last years. This contingency could be avoided by using the \$60,000 to purchase an annuity under which an insurance company pays him certain amounts periodically throughout his life.

In short, interest payments are necessary to induce some, but not all, savings. Automatic savings occur independently of the interest rate, although the amount of income some persons have available for saving varies directly with the rate of interest. Savings which are not automatic tend to vary directly with the interest rate in some instances and inversely in others.

*Business Savings.* An important but not a major part of the national saving in any year is furnished by business enterprises. In addition to the personal savings of around 18 billion dollars in 1929, the Brookings Institution estimates business savings amounted to about 2.2 billion, giving a combined total of approximately 20 billion dollars. Thus, business savings ac-

counted for slightly more than 10 per cent of the total. Estimates by Doctor W. I. King for the decade of 1909-18 place corporate savings at about 15 or 16 per cent of the national income. Viewed from the standpoint of their own net income, he estimates that for the years between 1910 and 1926 corporations saved from 25 to 65 per cent of their net income except in the year 1921. Doctor F. C. Mills has estimated that for the period between 1922 and 1925 corporate savings furnished about 34 per cent of the new capital required by domestic corporations.

Like individuals, business enterprises seek to lay aside some of their earnings for a "rainy day." The vicissitudes in business activity are such that organizations must be prepared to meet economic emergencies. Not infrequently the financial strength, rather than the operating efficiency, of a concern prevents insolvency. Through the accumulation of a surplus, enterprises are in a better position to meet contingencies which may reasonably be expected to occur at unpredictable intervals. Along with the savings intended to meet emergencies which the enterprise may face, are those intended to protect dividends in periods of poor business. These savings are not essential for the financial solvency of the enterprises; they reflect a parental attitude on the part of corporations to their stockholders. Instead of allowing the shareholders to decide how much, if any, provision they want to make for times when the concern may have little or no earnings, the enterprise attempts to stabilize their dividend income by retaining a portion of its earnings in periods of good business for distribution in periods of poor business. Neither for emergencies nor for stabilization of dividends does the rate of interest operate as a stimulus or curb to the amount of business savings. However, in periods of prosperity when rates of interest tend to be high, the earnings of enterprises are also likely to be large, so that they have greater income from which to save than in periods of depression when interest rates and earnings are low.

Not all business savings, however, are prompted by protective considerations of the enterprise and its shareholders. Men-

tion has already been made of reinvestment of earnings for the purpose of expanding the activities of a concern. Whatever the extent of such reinvestment may be, it is likely to be larger in most cases than if individual investors had been allowed to decide for themselves what additional investment, if any, they wanted to make in the enterprise in view of the prevailing or expected return. Since those in control of large corporations own only a small part of the total investment, the decision to save applies predominately to the income which others than themselves would have received. When expansion of a business is expected to provide larger salaries and bonuses for those in active control, these considerations are likely to be paramount in deciding how much shareholders shall be compelled to save, so that the rate of interest which the additional savings will yield to investors may receive only secondary consideration. Then, too, savings are sometimes made to meet the cost of expansion, even though the expansion may result in bankruptcy, as previously noted concerning the Studebaker Corporation under the domination of the late A. R. Erskine. In so far as reinvestment is governed by rates of return to investors, the dominating influence is likely to be the difference between the prevailing rate of interest in the market and the rate of net profits for the particular concern. It is quite conceivable that a concern would reinvest the same amount when the prevailing rate is 4 per cent as when it is 6 per cent, provided there were prospects for the net profits of the concern to be, say, 3 per cent more than the prevailing rate of interest in either case. In any event, the fact that the management decides how much the shareholders are to save, rather than allowing them to make the decisions individually, does not eliminate or reduce the sacrifices in spending power on the part of the shareholders.

*Institutional Savings.* With the exception of commercial banks, most private financial institutions such as investment banks, trust companies, or insurance companies merely market funds placed in their charge. As marketers, they are not in a position to control the amount of funds available for lending.

The control is exerted mainly by those who entrust their savings to financial institutions for investment. The institutions tend to put whatever funds have been deposited to work whether the rate of interest is high or low. In so far as these deposits represent income derived from payments of interest, however, there is a tendency for more funds to be entrusted to financial institutions when interest rates are high than when they are low. With commercial banks the situation is somewhat different, for they do not lend merely that which has been entrusted to them. They also create credit, and may do so to a degree which results in forced savings. The way in which the rate of interest affects the amount of credit which commercial institutions create depends somewhat on whether the banks have excess reserves or must incur additional obligations to provide additional accommodations for their customers. In the absence of excess reserves the amount of credit created is likely to vary directly with the interest rate.

In short, saving involves sacrifices for all except the extremely wealthy. These sacrifices are encountered in connection with both voluntary and forced savings, but only in the case of voluntary saving is the payment of interest necessary to individual savers. Even here the necessity for interest as a means of overcoming resistance to saving occurs only for those who do not save automatically. In proportion to the degree to which sacrifices are involved, there is a resistance to savings. But it is to be remembered that only for voluntary savings must interest payments be made to individuals, since only with such savings do the savers control the amount of saving.

## II. RATE OF INTEREST

Thus far attention has been focused on the circumstances which give rise to payments of interest, and not to the circumstances which determine the amount or rate of interest. There is, in fact, not one rate of interest but many of them, by virtue of the different conditions under which funds are borrowed and lent.

**A. ELEMENTS INCLUDED IN THE RATE**

Many borrowers and lenders are not consciously aware that the rate of interest they pay or receive may actually include a return for several quite different things. Included in the rate may be compensation for waiting, risk, and administration.

*Waiting.* Time is an essential element in all borrowing and lending. Whether funds are wanted to finance the creation of capital or to finance consumption, the funds are wanted for a period of time, so that those who make funds available for these purposes must be willing to wait until a future time for the return of their funds. When parties with funds at their disposal are willing to release them for use by others during a period of time, the lenders perform a service designated as waiting. From this standpoint rich and poor alike perform a service when they lend their funds. Likewise, the same service of waiting is performed by financial institutions when they assume responsibility for deposits and then release these deposits for others who want to use them for a period of time.

The compensation for the service of waiting is generally known as pure interest, which distinguishes the service of waiting from the gross interest which includes other elements. The amount of compensation necessary for these latter elements varies with different types of loans as will be seen. But not so with the compensation for waiting. The willingness or the reluctance to wait for the return of funds is not influenced by the use to which the funds are put. Even if the willingness to wait were determined only by the sacrifice involved in saving, there would be no greater sacrifice when funds are used in one way than when they are used in another. There are some persons who are so eager to save for the future that they would save even if they knew in advance that their savings would have depreciated somewhat before they were wanted for future consumption. Such depreciation is especially likely if the saving takes the form of goods subject to physical deterioration but would also occur if some kinds of

money were used like "dated money" which declines in value when held beyond a specified time. With full knowledge of this decline in value some savers might, for instance, be willing to save and to lend \$100 at the present time if they had the assurance of having \$99 returned to them one year hence. In such instances there is a negative rate of pure interest. There are other people who would be willing to wait for the return of their savings, but only if they were assured of getting back at least the same amount they had lent. If \$100 were lent on the condition that \$100 would be returned a year hence, the rate of pure interest would be zero. But many lenders are willing to perform the service of waiting only when they are compensated for the service. They would lend \$100 only on the condition that something more than this amount would be returned to them, and there is a positive rather than either a negative or zero rate of pure interest. If \$103 is to be returned a year hence the pure interest rate is  $\$3/\$100$ , or 3 per cent. The higher the rate of pure interest that will be received as compensation for lending money, the larger is the amount of lendable funds likely to be. However, the amount available for particular purposes is not determined solely by this rate.

*Risk.* In addition to compensation for the service of waiting there is generally some risk involved in the lending of funds. Seldom is there complete safety for the principle. The nearest approach to this for long-term investments is found in certain types of high-grade government bonds. But even governments may be overthrown by revolution, and other types of pressure may also result in either partial or complete repudiation of the obligations. Nevertheless, of available choices, governmental obligations are preferable. Back of these is the taxing power, which has no legal limit and ordinarily has very wide economic limits. Through its use governmental agencies are in a position to obtain compulsory savings with which to meet bonded obligations. The interest rate on the highest grade governmental bonds represents little if anything more than pure interest. Public utilities as a group generally come

next with respect to freedom from risk. The essential nature of their service gives rise to a more stable demand than is experienced by enterprises in most other businesses. In addition to this, utilities have the benefit of restricted competition. Despite these circumstances enterprises in this field do become bankrupt, causing losses to those who have lent on bonds and notes. However, still greater risk surrounds loans to enterprises of other types when they are considered as a group. The demand for their service is likely to be less stable, and they are subject to whatever competition develops. In rare instances some of these enterprises are able to borrow on substantially equal terms with the Federal Government. In 1936 the Standard Oil Company of New Jersey borrowed \$85,000,000 to retire a 5 per cent issue of preferred stock of a subsidiary known as the Standard Oil Export Corporation. The borrowing was for twenty-five years at a rate only slightly over 3 per cent, the lowest interest rate for long-term funds ever paid by any industrial corporation in the country. At the same time, the Federal Government borrowed for fifteen to eighteen years at  $2\frac{3}{4}$  per cent, a record low rate for such maturities. When allowance is made for the income taxes which large holders of the private bonds will be compelled to pay on the interest they receive, while interest on government bonds is tax exempt, it is estimated the Standard Oil bonds would yield a large investor only 2.65 per cent in comparison with 2.75 per cent for government bonds. Consequently, in an exceptionally depressed money market a private enterprise was in this case able to borrow on terms virtually as favorable as could the Federal Government.

Not only is the risk an element in the rate of interest paid by business enterprises for the funds they borrow, but it also enters into the rate paid for consumers' loans. Some loans of both types involve great risks, although the degree of risk connected with most consumers' loans appears to be much exaggerated. It is true that when a merchant borrows to buy goods, the subsequent sale of the goods provides the means for repaying the borrowed funds, whereas when a consumer buys

furniture on the installment plan the furniture is not likely to provide any additional income from which the loan or future installments can be paid. If consumers buy heavily on deferred payment plans and then find themselves with reduced income through less employment or lower rates of pay, the payments become more difficult to make and may ultimately become impossible. In the latter event repossession of the goods by the creditor may be necessary. Even when this occurs, there may not be any loss sustained through the loan if the second-hand value of the property more than covers the unpaid balance. At times borrowers disappear and take with them the goods, which serve as a type of collateral for the loan. Under these circumstances, the probability of loss to the lender is greater than when repossession of the goods is possible.

The fact that lenders require additional compensation for assuming risks does not mean that the rates charged for this service protect the lenders from loss. At the time a loan is made there is no way to determine what loss, if any, will develop. The most that can be done is to judge the probability of loss by experience with loans of a similar kind. It is known in this way that some types of loans are conspicuously free from loss, while losses occur in varying degrees with other types. Only banks and other professional lenders are in a position to estimate with reasonable accuracy the average loss on various types of loans. If experience indicates that one type of loan averages a loss of 1 per cent and another type 3 per cent, these rates tend to be added to whatever pure interest rate prevails. There may be no losses connected with most loans, while there may be losses far in excess of the average in connection with others. If conditions surrounding a particular case differ distinctly from those usually found, a higher or lower rate may be charged depending on whether there are prospects for larger or smaller losses than the average. The rate charged for risk for any particular loan can reflect only the probability of loss and the actual loss, if any, may be more or less than expected.

*Administration Costs.* Just as a merchant incurs costs in

handling goods, there are costs involved in the marketing of funds. These administrative costs are much greater with some types of loans than with others, and to some extent the degree of risk incurred depends on the extent to which administrative costs have been incurred in the making of loans and in the follow-up of the borrowers.

The highest administrative costs are generally incurred with consumer loans. Before credit is extended, inquiry is made concerning different items, such as the individual's income, name of employer, and whether or not the applicant owns his home or other property, pays bills promptly, or has relatives. Not infrequently concerns specializing in making such loans know more about their customers than the customers know about themselves. Then, too, there is the cost of recording and supervising the collection of weekly and monthly installments. In some cases collectors are employed who call at the debtor's home or place of employment. Calls are scheduled to correspond with the times at which the debtor is known to be in possession of funds. In other cases, telephone calls and mail notices are sent a few days before payment is due and if the payment is not made promptly there is a persistent follow-up. When difficulty is encountered in obtaining payment various embarrassing tactics can be employed. All this may serve to reduce losses, but it increases administrative costs. Since consumer loans are usually rather small, the minimum administrative costs per loan are likely to be a considerably larger proportion of the gross interest than for loans to business enterprises.

Under some circumstances, rates of interest may cover little more than the administrative costs incurred in handling the transactions. Just as a manufacturing concern may have unused plants and equipment, so a bank may have unused lending power. In both cases there are certain costs which continue whether the operations are at, or below, their normal level. Banks have buildings, equipment, and working forces which impose costs whether loans are large or small at any particular time. If a bank with unused funds at its disposal

is able to make additional loans which involve virtually no risk, it may offer those funds at rates which only slightly more than cover the administrative costs in connection with the loans. Instances of this are most likely to occur in connection with "call money," or the funds lent to brokers in financing stock market operations. The collateral placed with the bank by the brokers furnishes an abundant margin of safety for the bank, and the latter is in a position to call for repayment of the loan whenever it sees fit. At the same time that rates for commercial loans are 6 per cent, those for call money may be one half of 1 per cent. In addition to lending call money at very low rates, banks may also purchase short-term government obligations paying rates which are scarcely more than sufficient to cover the costs of handling the transactions.

#### B. DETERMINATION OF INTEREST RATE

These elements of waiting, risk, and administration give rise to costs which are necessary to obtain voluntary savings. However, the prevailing rates of interest are determined by the joint influence of demand and of supply. Along with the powerful competitive forces there are other forces of monopoly, tradition, and regulation which affect interest rates.

*Competitive Forces.* To a much greater extent with lendable funds than with labor, the competitive forces in operation at any given time are world-wide in scope. Modern facilities for transportation and communication, combined with a network of financial institutions whose activities extend into all quarters of the globe, have greatly increased the ease with which funds flow from one country to another. Barriers to the movement of labor can be imposed much more easily than barriers to the movement of funds, which may be transferred merely by coded message. Although these world-wide movements do not alter the basic forces involved, they bring these forces into play in such a manner as to make their deliberate control by individual nations rather difficult unless extensive and rigid control can be exercised over international transactions.

(a) *Demand.* It has been seen that funds are sought by

private parties and governmental agencies for a variety of purposes. Just how the quantity of funds wanted is related to the interest rate is a subject of considerable controversy. It is asserted by some that business concerns will borrow as readily at high as at low rates, provided there is an opportunity to use the funds profitably. Consumers are supposed to incur obligations first and then to think of the finance charges they have assumed, rather than to think of these charges first and be guided by them. In the case of government borrowing, political instead of economic considerations are likely to dominate, with the result that the amount of borrowing bears no consistent relation to the rate of interest. These contentions have a degree of validity, but it is doubtful if they result in making the aggregate amount of borrowing independent of the rate of interest.

There are reasons for believing that the amount of funds wanted at a given time tends to be greater at a lower than at a higher rate of interest, although within at least the usual range of interest rates, this is not a universal tendency with respect to all individual borrowers or to all groups. The outstanding exception is probably the borrowing by governmental agencies, and much speculative borrowing may be somewhat independent of the rate which must be paid for the funds. But neither of these types of borrowing ordinarily constitutes the dominating use of funds. Even though some consumers borrow without much *conscious* regard for the rate of interest, the rate of necessity affects the degree of borrowing. Whatever the desires may be to purchase on an installment basis, most consumers have a relatively fixed amount of income that can be directed to making installment payments. The more they must pay for financing charges, the less they are able to spend for goods, so that they have less occasion to borrow. It must be realized, however, that the chief use of borrowed funds is generally by private enterprises in acquiring facilities for producing goods, in connection with which the phenomenon of diminishing productivity is encountered.

(1) *Diminishing Productivity.* It has been seen that in the

productive process various factors are required and tend to be combined in such proportions as to be most advantageous to those engaged in producing the goods in which the services of these factors are embodied. Just as in the case of labor, employers do not want an indefinitely large amount of capital in relation to the other factors of production. As the amount of capital increases with other factors remaining the same, a point is reached after which total production increases at a diminishing rate. Moreover, as output expands in relation to a given demand for the goods, their selling prices must decline. Employers of capital will not pay the same rate of interest for funds with which to acquire capital when the marginal productivity of that capital is low as when the productivity is high. As a result of capital's diminishing productivity there is likely to be a tendency for the amount of savings sought to vary inversely with the rate of interest.

(b) *Supply.* Although savings constitute either the direct or indirect foundation for lendable funds, there are different circumstances under which savings arise. It has been seen that some saving is voluntary and some compulsory; some is automatic, and some is not. Out of the conflicting circumstances under which personal, business, and institutional saving arises there comes a variety of views with respect to the way in which the total volume of saving is related to the rate of interest. The most probable of this confusing assortment of views seems to be that the aggregate amount of saving tends to vary directly with the interest rate, so that there is a larger total amount at a higher than at a lower rate. However, it may well be that the supply schedule is quite inelastic. In other words, a given increase in the rate of interest would result in a proportionately smaller increase in the volume of savings. Thus, if the rate increases by one third, say from 6 to 8 per cent, the aggregate volume might increase by only one twentieth.

(c) *Point of Balance.* At any given time, the rate of interest in a market tends toward the level at which the quantity of saving wanted corresponds with the quantity offered. This is illustrated in Figure 70. Line D represents the demand

schedule, showing that borrowers will want more funds at lower than at higher rates. Line S, showing the supply schedule, indicates that more savings will be offered at a higher than at a lower rate. It will be noticed that the supply schedule is

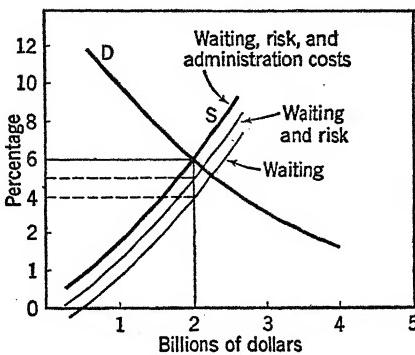


FIGURE 70. DETERMINATION OF COMPETITIVE INTEREST RATES

composed of three elements: waiting, risk, and administration costs. The line indicating *waiting* shows the tendency for savings to increase as the rate of pure interest rises. When the cost of risk is added to the cost of waiting the *waiting plus risk* line results, and when to these are added the administrative costs, the *waiting plus risk plus administration costs* line, or the supply line, results. Under the indicated conditions of demand and supply, the competitive rate would be 6 per cent. At this rate borrowers would want 2 billion dollars and lenders would furnish the same amount. Expressed differently, the marginal lending rate for 2 billion dollars is 6 per cent and the marginal borrowing rate for that quantity is also 6 per cent. Of the 6 per cent which would tend to prevail, 4 per cent represents pure interest, 1 per cent risk, and 1 per cent administrative cost.

The foregoing illustration serves to emphasize the operation of basic competitive forces, but it is not intended to suggest that these forces establish gross interest of uniform rate for all borrowing and lending. There are, in fact, widely different

rates, extending from the low ones on governmental obligations to the high ones on pawnbroker loans. However, there is one element in common for all transactions, and that is waiting. The cost of waiting is no greater with pawnbrokers' loans than with loans to a stable and reliable government, so that it might be expected that the rate of pure interest would tend to be uniform for all transactions. To this rate would be added such compensation for risk and administration as different transactions required. Consequently, in so far as the combined costs for risk and administration are the same with different types of loans, the gross interest rate would tend to be the same, but in so far as these combined costs are different, the gross rate of interest would not tend to be uniform.

Although gross rates are not necessarily uniform for different types of loans, the extent of divergence varies from time to time. This is indicated by the following yearly averages for loans with regularly quoted rates:

	1919	1929	1935
Bonds (governmental) . . . . .	4.6%	3.6%	2.7%
Bankers' acceptances . . . . .	4.3	5.0	0.1
Call loans . . . . .	6.3	7.6	0.6
Time loans (60-90 days) . . . . .	5.9	7.7	0.6
Commercial paper (4-6 months) . . . . .	5.4	5.8	0.9
Customers' rates (New York City) . . . . .	5.5	5.9	2.7
Customers' rates (other Northern and Eastern cities) . . . . .	5.7	6.0	3.9
Customers' rates (Southern and Western cities) . . . . .	6.0	6.1	4.7
Federal Reserve rediscount (all banks combined)	4.8	5.0	1.9

(Source: *Standard Statistics*)

Thus, in 1919, the highest rate was 6.3 per cent for call loans and the lowest was 4.3 per cent for bankers' acceptances. The highest was only about a half greater than the lowest. In 1929, the highest was 7.7 per cent for time loans of sixty to ninety days and the lowest was 3.6 per cent for government bonds. Here the highest was a little more than double the lowest. In 1935, the lowest was 0.1 per cent for bankers' acceptances and the highest was 4.7 per cent with commercial banks in Southern and Western cities having customers' rates

of 4.7 per cent. The difference here was 4.6 per cent, so that the highest was 46 times greater than the lowest.

*Modifying Forces.* Although different rates of gross interest might well be expected under perfect competition, the rates actually charged and paid are influenced by other than strictly competitive forces. Even the regularly quoted rates are not in all cases strictly competitive rates. The modifying forces include monopoly, tradition, and regulation.

(a) *Monopoly.* Many communities have a single bank for the collection of savings and for the marketing of funds. This single institution is the only source of funds for most borrowers in that locality; hence there can be no rivalry among both lenders and borrowers. In larger places there are rival banks, but here two other circumstances generally develop which operate to restrict competition. Each bank is likely to seek the exclusive patronage of its customers. As a means to this end it may lend only to depositors or at least may lend more freely and perhaps on more favorable terms to them than to others. Since most prospective borrowers are not able to be depositors in several banks, they have not the banking "connections" which would enable them to play one bank against another. Then, too, the banks of a city or county may, through agreement, follow a uniform course of action, as in setting the rates for savings accounts. There is also reason to suspect that insurance companies in making mortgage loans do not follow entirely independent courses of action. The disinclination of commercial banks to furnish consumer loans has enabled finance companies to charge higher rates for such accommodation than would otherwise be possible. On the other hand, there are cases in which the whip hand is the borrower's. In any bank the size of individual accounts varies, but not infrequently a bank has a few extremely large accounts. If the withdrawal of a predominating account would be disadvantageous to the bank, the depositor is in a position to drive a harder bargain for loans than can smaller depositors.

(b) *Tradition.* Among the influences affecting some interest rates is that of tradition. Even in the absence of under-

standings and agreements among financial institutions certain interest rates show a greater tendency to inflexibility than can be accounted for by stable conditions of demand and supply. Instances of this occur with the interest rate on savings accounts often remaining at 2 or 3 per cent for extended periods of time. A rate of 6 per cent is frequently customary for the general run of commercial loans. During the 1929 depression when banks came to have tremendous unused lending power, rates to large borrowers fell to less than 2 per cent, but 6 per cent tended to remain for the smaller commercial loans. Not until 1936 did a break occur, with the National City Bank of New York leading the way with a 4 per cent rate.

(c) *Regulation.* Few prices are subject to more extensive regulation than are rates of interest. The international flow of funds is subject to governmentally controlled rates for foreign exchange. These are not interest rates, but, as has been seen in an earlier chapter, are the ratios in which the currency of one country can be converted into that of another. By deliberate regulation of these rates the shifting of funds between countries can be controlled to a considerable degree. Not only the international flow but also the availability of domestic funds can be controlled, as has also been seen, by the operations of the Federal Reserve System. In addition, most states have usury laws which set maximum rates which can be collected through legal procedure. For most transactions the legal rate is about 6 per cent, although for small household, personal, and pawnbrokers' loans rates varying from 3 to  $3\frac{1}{2}$  per cent a month or about 36 or 40 per cent a year can be charged in several states.

However, the regulation of maximum rates has not been a serious barrier to higher rates when other circumstances enable them to be charged. Numerous devices have been used which in effect increase the price which borrowers must pay for accommodation. A bank may lend a business enterprise \$50,000 at 6 per cent on condition that 10 per cent of the loan be kept on deposit. Consequently the borrower pays interest on \$50,000 but has only \$45,000 at his disposal. This is equiv-

alent to a higher interest rate on the actual borrowing. Building and Loan Associations have at times gotten around the legal restriction of 6 per cent by a "premium" which was supposed to represent the amount borrowers bid for the privilege of being granted a loan on which they then paid 6 per cent. A different arrangement is the widely advertised "6 per cent plan" for purchasing automobiles. Suppose an individual buys a car for \$400, paying \$100 in cash and "financing" the balance with monthly payments for a year. Before the finance company will lend the balance of \$300, the car must be protected by insurance policies covering theft, fire, and other property damage. This may increase the borrower's obligation by \$21, so that he must actually borrow \$321. Interest is then calculated on this amount for a year, which increases the aggregate obligation by about \$19, making a total of \$340, which is generally repaid in twelve equal monthly installments. By making monthly payments the borrower does not have the use of \$340 for an entire year, but has an average of \$170 for the whole year. Only during the first month does he actually have the use of the entire \$340, and by the twelfth month he has repaid all but about \$28; yet he is being charged interest as though he had the entire \$340 at his disposal until the end of the year. Consequently, he is paying about \$40 in order to obtain a loan of \$150 for a year, or a real rate of more than 25 per cent, rather than a rate of 6 per cent. Even if the insurance element be disregarded, the rate is 12 per cent and not 6 per cent.

*Real and Nominal Rates.* Quite independently of any attempt to evade legal regulations, differences may develop between the nominal and the real rate of interest. These differences are common when certain privileges accompany a loan or when changes occur in the general price level.

(a) *Privileges.* The terms on which both governmental agencies and private enterprises borrow may include privileges to the lender which induce him to accept a lower interest rate than he would otherwise accept. Government bonds are often issued on the condition that interest payments are

exempt from taxation. This exemption is a source of considerable advantage to large investors whose income is subject to very high rates of taxation. Not infrequently these investors will lend their funds to the government at lower nominal rates than they could obtain by lending to private parties. Private corporations may also issue bonds carrying certain privileges which enable the funds to be borrowed at lower rates than would be possible in the absence of the privilege. An instance of this occurred in 1935 when the New York Central Railroad floated a \$90,000,000 bond issue at 4 per cent. Other issues of the road were yielding 4½ per cent and, since its stock had once sold at \$200 a share, the privilege of converting the bonds into stock at \$25 a share was thought to be sufficient speculative flavor to induce investors to lend at 4 instead of 4½ per cent.

(b) *Price Level Changes.* Changes in the general level of prices will also give rise to a difference between the nominal and the real rate of interest. If loans are made at one level of prices and interest together with principle are paid at a different price level, the real interest rate depends on the purchasing power of that which has been received in comparison with that which was lent. A nominal rate of 5 per cent may develop into a real rate of 10 per cent under a declining price level, or may develop into a negative rate of 10 per cent under an increasing price level. This is approximately what happened between 1915 and 1927 according to the calculation of Professor Irving Fisher. Between 1915 and 1920 he estimates the interest rate on commercial paper of sixty to ninety days' duration was 5.1 per cent, the annual rate of change in the price level for the period was 14.9 per cent, so that a negative interest of 9.8 per cent resulted. Between 1920 and 1927 the opposite situation occurred. With the nominal rate for commercial paper at 5.0 per cent, the price level declined at a yearly rate of 6.3 per cent, so that the nominal interest rate of 5 per cent became a real rate of 11.3 per cent.

## QUESTIONS

1. "While lendable funds are useful in various ways, these ways are not all equally important to society." Point out the leading ways in which lendable funds are socially useful.
2. "The reason why interest can be paid is quite different from the reason why it must be paid." Explain.
3. "Lendable funds are useful but not essential for financing production." Do you agree? Give reasons.
4. Why does saving involve sacrifice for most individuals?
5. "Even though most persons experience sacrifice in saving, the degree of sacrifice is by no means the same for all." Explain the circumstances which influence the degree of sacrifice involved.
6. What is meant by "automatic savings"?
7. "How the interest rate will affect the savings of individuals depends on how much importance they attach to the future as compared with the present." Explain.
8. "Interest is not necessary for automatic but is necessary for non-automatic saving." Evaluate.
9. "A higher interest rate may increase the savings of some persons and reduce those of others." Explain.
10. Are the circumstances that prompt business savings the same as those that prompt personal savings? Explain.
11. What is meant by "institutional savings"?
12. "The payment of interest is not essential for saving." Do you agree? Explain.
13. Distinguish between gross and pure interest.
14. "Consumers' loans involve a large element of risk and hence interest rates are high to compensate for the additional risk." Is this statement valid? Explain.
15. Point out the circumstances which tend to make the administrative costs on consumers' loans higher than the costs for loans to business enterprises.
16. "Under competition interest rates would be uniform for all types of loans." Is this statement accurate? Give reasons.
17. Explain how interest rates may be influenced by monopoly and tradition.
18. What basis, if any, is there for the statement that "interest rates are subject to extensive regulation"?
19. Distinguish between nominal and real interest rates and point out the circumstances which make such a distinction necessary.
20. Do you think it is the nominal or real rate of interest which influences the amount of savings? Give reasons.

## CHAPTER XXIV

### RENT

IN THE preceding chapter emphasis was placed on the income derived from the loan of funds to be employed mainly in the creation of capital. It was noted that funds were also used to acquire land. This is a form of property which gives rise to a type of income known as rent. So far as individual borrowers and lenders are concerned no significant difference need exist between funds lent to finance the creation of goods and those used to acquire land. Whether the compensation takes the form of interest or of rent is likely to be immaterial to them. But economically there is a fundamental difference between the conditions which determine interest rates for loans and those which determine rental payments for the use of land. At present, attention centers on the property income derived from the use of land.

#### I. MEANING OF LAND AND RENT

In view of the fact that the terms land and rent have a restricted economic meaning, it will be well to have their meaning clearly in mind so as to avoid confusion when the same terms are used in other connections with different meaning.

*Land.* For economic purposes an essential distinction exists between those things which come into existence without any effort on the part of man and those things which man has had a part in creating. When the production of goods requires the labor of human beings or the services of their savings, costs are incurred. But not so with those things furnished by nature. The economist calls these gifts of nature "land." The resources so included are not only the surface of the earth, but the coal fields, oil pools, copper deposits, stone quarries, virgin

forests, wild animals, running streams, climate, and other creations which exist independently of man.

If land includes all the gifts of nature it might seem more appropriate to speak of natural resources, since land is most likely to suggest only the surface of the earth. It is this surface, however, which is in a key position with respect to other resources, as has been noted in an earlier chapter. The surface gives access to the sunlight, air, water, mineral deposits, etc. Consequently the possession of the surface makes available most of the things which are above and below it either in an attached state, as with trees, or in an unattached state, as with oil. Moreover, the surface in some cases gives access to that which adjoins it, as in the case of navigable streams.

Not only does the surface land hold a key position with respect to other resources, but in common with some of them it has two characteristics which further affect its economic importance. It is non-reproducible and immovable to any important degree. From time to time the forces of nature operate to submerge some formerly exposed land and to expose some which was previously under water. These changes are negligible in relation to the aggregate amount of land surface. Nor can man bring about any significant shifting of land from one place to another. He can dig reservoirs and fill the excavations with water; he can eliminate swamps by filling them with soil as well as by draining off the water; he can cut off the brow of a hill and fill in the foot of it. But after all this has been done, the aggregate remains substantially the same.

However, these changes which man can bring about through his own effort are responsible for eliminating any sharp line of separation between natural resources and capital. Indeed, the results of nature's activities and those of man are often so interwoven that they permit neither physical nor economic separation. Virgin forests give way to those planted by man. His efforts change the fertility of the soil. By laying roads or by building and operating vessels he makes inaccessible resources accessible. Through his inventions, discoveries, and direction, plants and animals are bred deliberately, so that they are no

longer natural resources. A race track is not merely a piece of land, but a piece of land plus capital.

*Rent.* In ordinary speech, rent is likely to refer to payments for the use of any durable property. Thus individuals rent homes, stores, factories, automobiles, boats, horses, and even clothing. In some cases patented machinery is rented instead of sold. The payments made in connection with the use of such property are likely to include compensation for various services which man has performed in making the property available for use. An illustration occurs with the rental of apartments. The monthly rental may include a payment not only for the land on which the apartment is constructed but also for the savings embodied in the building and its equipment as well as for heat, janitor service, and the management of the property. These items are not listed separately but are all included in a single rental payment, sometimes called commercial rent to distinguish it from a type of rent often designated as economic rent. The latter is a return for only the use of land and it is with such rent that the present chapter deals.

## II. DETERMINATION OF RENT

As in the case of wages and interest, it will be convenient here to distinguish the basic competitive forces operating to influence the rent of land from those which exert a modifying influence on the basic tendencies.

### A. BASIC FORCES

The circumstances surrounding the use of land are such that it may be helpful to consider first how rent would be determined if land were of uniform quality, even though fixed in amount; then to introduce the influence which variations in quality exert on rent; and finally to consider how the fact that the same land may be used for different purposes affects rent.

*Uniform Quality of Land.* If we assume land to be of uniform quality, it is possible to consider the operation of basic forces under the simplest conditions of supply. Under these conditions the influence of a fixed amount of land shows itself

more sharply than when different grades of land are considered. At the same time the uniform quality does not affect the basis on which the demand for the land is determined.

(a) *Diminishing Productivity.* Like the other productive factors, the demand for land is derived from the uses to which the land can be put in furnishing goods for final consumption. In producing these goods the various factors of production, it has been seen, tend to be combined and coordinated in order to minimize the costs of production. How much of any one factor will be used in relation to the others depends on its productivity. This is equally true of land, although it is not seen so readily in this connection, since many enterprises do not have so much opportunity to increase or decrease the amount of land they use as they have for varying the amount of labor and capital.

The opportunity for shifting is most noticeable in agriculture. As farmers employ more land in relation to the same amount and kind of labor and capital, a point is reached after which additional land would result in smaller additional yields. The additional output represents the amount which can be attributed to the use of additional land because the amount of labor and capital employed remains the same. With all the land of equal quality, the output of the additional or marginal acres represents the amount which any one acre can be said to contribute to the total production. If landlords accepted crops in payment for the use of their land this marginal production would be the amount which farmers would pay for the use of an acre of land, since it is the amount which the land itself has contributed.

But land rents are usually paid in money and the amount per unit of land depends on the selling price of the goods in which the services of land are embodied. With no change in demand for these goods, if additional acres are used and total production increases even though at a diminishing rate, the selling price of the goods declines. If the marginal production is multiplied by the selling price, the marginal productivity of an acre is obtained, so that when less is received for the goods there is less value to be attributed to the services of land and its mar-

ginal productivity declines. It is this marginal productivity of a quantity of land that determines the rent which will be paid per acre for the use of the land. In view of the fact that the marginal productivity declines as the amount of land increases in relation to the other factors of production, there is a tendency for a larger quantity of land to be wanted at a lower rental than at a higher rental. Hence the derived demand for land conforms to the law of demand.

Even though the tendency to diminishing productivity of land is probably seen most clearly in agriculture, its operation occurs with land used for other purposes. Manufacturers and merchants cannot expand the amount of land they employ indefinitely without reaching a point after which, with the same amount of labor and capital, their total production increases at a diminishing rate. Nor can they avoid the necessity of selling larger quantities of goods at lower prices when the demands of the consumer remain unchanged; so that, as the amount of land used increases, its marginal productivity declines. Since the amount manufacturers are willing to pay for the use of a unit of land will not exceed its contribution to total productivity, they too will employ more land at lower than at higher rentals.

The reason the tendency to diminishing productivity is more difficult to see in connection with manufacturing plants, stores, and offices is that the additional land requires at least some additional capital in the form of buildings. If a manufacturing concern has a five-story plant on a lot 100 X 100 feet and rents an additional one-story building on a similar size lot to serve as a warehouse, there has been a relatively greater increase in the amount of land than in the amount of capital. Here the underlying tendency to diminishing productivity of land continues, although it is more complicated by other considerations than is generally the case in agriculture, where land is the most prominent factor of production.

Then, too, when land used for residential purposes is considered, the situation is complicated by the fact that additional land alone is not wanted, and by the further fact that the use

of land for this purpose is not determined entirely by its productivity. Psychic income rather than money income dominates the decision of many persons to acquire land on which they erect their homes. Only to a limited extent is land leased for residential purposes. Land or ground rents of this kind are found in Baltimore, for example. These circumstances, however, do not alter the tendency for more land to be used in relation to capital at lower than at higher rentals. With higher rentals there is more tendency for the construction of multiple dwelling and apartment houses than at lower rentals; less land is used in relation to capital. At lower rentals for land of a given grade there would be a greater tendency for single dwellings with larger plots of surrounding land. Thus there is a tendency for the average amount of land wanted per residential unit to vary inversely with the rental for the land.

(b) *Point of Balance.* If the amount of available land is fixed, the rent of land tends toward the level of the marginal demand price for the available quantity. This is illustrated by Figure 71, in which line D represents the demand for use of land and line S indicates a fixed quantity available regardless of price. Under these circumstances an acre of land would rent for \$20, since at this price the number of acres wanted would be in balance with the number available. If demand declined, rent would necessarily fall, while with an increase in demand, rent would unavoidably rise. Thus an increased demand, as indicated by line D' would drive rent from \$20 to \$30 an acre.

*Different Grades of Land.* It is well known that land used for the same purpose is of unequal quality, and although there are variations in the quality of labor and capital, adjustments

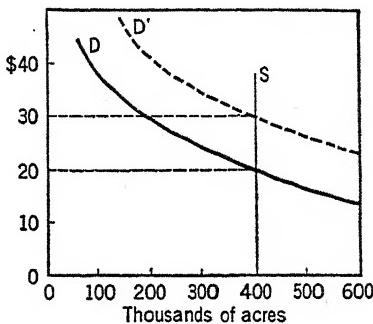


FIGURE 71. DETERMINATION OF RENT WITH A FIXED QUANTITY OF AVAILABLE LAND

for their variations are not made in the same way as adjustments concerning land. The derived demand for the service of land may not justify using all the existing land, and, if the entire amount is required, the grades are used with varying degrees of intensity.

(a) *Diminishing Returns.* Diminishing returns on different grades of land develop not only as better grades are utilized more intensively, but also as poorer grades are brought into use. The available labor and capital will tend to be distributed over the various grades, so that the additional or marginal return on one grade of land will tend to be the same as on another. Suppose there are only three grades of land, designated as A, B, and C. Assume further that in utilizing the land, units of labor and capital are employed represented by expenditures of \$10 per acre. An initial expenditure of \$10 might yield additional returns of 20, 15 or 10 bushels depending on the grade of land. This is indicated in the left-hand diagram of Figure 72. As long as a yield of 20 bushels for an initial expenditure of \$10 on Grade A land is sufficient to meet the demand, there is no occasion for any other grade to be brought into use or for the best grade to be cultivated more intensively. If more production is needed, a second unit of labor and capital will yield as much additional return on Grade A land as an initial expenditure of \$10 on Grade B, namely 15 bushels. Consequently, whether an additional expenditure is made for more intensive cultivation of the first grade or for pushing the cultivation extensively to the second grade is a matter of indifference. If, however, a second expenditure is made on the first grade, a third expenditure will not be made on it until an initial expenditure has been made on Grade B. The reason for this is that a third unit of labor and capital on the best grade would yield only 10 additional bushels per acre as against 15 bushels on the second grade of land. If two units of labor and capital on Grade A and one on Grade B do not furnish sufficient total production to meet the demand, there is again an equal choice between cultivating the land already in use more intensively and applying additional expend-

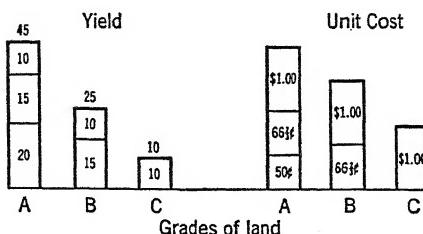


FIGURE 72. ILLUSTRATION OF SIMULTANEOUS UTILIZATION OF LAND INTENSIVELY AND EXTENSIVELY TO THE POINT WHERE ADDITIONAL YIELD AND ALSO UNIT COST ARE THE SAME ON ALL GRADES EMPLOYED

itures to still poorer grades, since a third expenditure on the best grade, a second expenditure on the next, or an initial expenditure on the poorest will yield the same return, namely 10 additional bushels per acre. Thus, additional labor and capital are applied to the different grades of land so that the additional or marginal production tends to be the same on all grades.

(b) *Increasing Unit Cost.* It will be recalled that whenever the tendency to diminishing returns develops there is also increasing per unit cost. When an expenditure of \$10 on Grade A land yields 20 bushels of product, the cost per bushel is 50 cents, whereas if only 15 bushels are obtained for the same expenditure the unit cost is  $66\frac{2}{3}$  cents as against \$1 a bushel when the additional output is only 10 bushels to the acre. These unit costs are represented in the right-hand diagram of Figure 72.

The aggregate production at these various unit costs will depend, of course, on the number of acres there are of each grade of land. If there are 10,000 acres each there will be 200,000 bushels produced at 50 cents, since the 10,000 acres of Grade A land yield 20 bushels with an initial expenditure of \$10 per acre. Both A and B grades contribute to the production, which costs  $66\frac{2}{3}$  cents when 15 bushels are obtained per expenditure of \$10. Since there are 20,000 acres with this yield, the total additional output at  $66\frac{2}{3}$  cents is 300,000 bushels. All three grades contribute to the yield of 10 bushels

per additional expenditure of \$10, so that there are 300,000 bushels produced at a marginal cost of \$1 per bushel. This is shown by Figure 73.

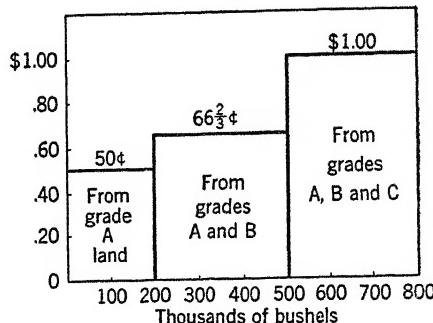


FIGURE 73. ILLUSTRATION OF DIFFERENT GRADES OF LAND CONTRIBUTING TO AGGREGATE PRODUCTION AT THE SAME UNIT COSTS FOR ADDITIONAL OUTPUT

(c) *Amount of Rent.* In illustrating the circumstances which determine rent for different grades of land, it will be assumed that there is a demand for 800,000 bushels at \$1 each, so that the quantity wanted at that price corresponds with the quantity which will be furnished. In other words, the marginal demand price and the marginal supply price correspond. In furnishing an aggregate output of 800,000 bushels, the same marginal costs are encountered on all three grades of land, but not all grades will yield rent to their owners.

The poorest grade of land brought into use does not yield rent, although it serves to reduce the pressure which would otherwise require the better land to be used more intensively. An initial expenditure of \$10 per acre for labor and capital employed in cultivating Grade C land yields only 10 bushels of product. With a selling price of \$1 a bushel the entire receipts are just sufficient to cover the cost of cultivating the land, harvesting the crop, and marketing it. With nothing left for rent the land becomes no-rent land. In a physical sense the land has contributed to the crop raised on it as truly as the better grades contributed to the crops raised on them. But in an

economic sense, the land of Grade C quality contributes virtually nothing to the total productivity since substantially as much productivity would result if the labor and capital used thereon were distributed over the better grades. Consequently, the poorest grade is brought into use only when it can be got rent-free. If anything had to be paid for the land there would be no advantage in using it, since the total unit costs would exceed the selling price.

Better grades of land yield something more than the cost of labor and capital, which difference constitutes the rent or the amount of production which can be attributed to the land itself. One way of estimating the rent is to deduct the productivity of labor and capital from the total productivity per acre and to consider the difference as rent. On an acre of Grade A land the total productivity is \$45 (45 bushels with a selling price of \$1 each), and the marginal productivity per unit of labor and capital is \$10. With three units of labor and capital employed their combined contribution to the total productivity is \$30, leaving \$15 as rent. On an acre of Grade B land with a total output of 30 bushels the total productivity is \$30. In obtaining this, only two units of labor and capital are employed with the same marginal productivity per unit as on the other grades of land, namely \$10, so that their combined contribution to the total productivity is \$20. This leaves \$10 as rent for an acre of Grade C land. Since the total productivity per acre of third grade land is \$10 and the marginal productivity of labor and capital is also \$10, there is nothing left for rent.

Another method of obtaining the same result is to estimate how much output or productivity would be lost by withdrawing from use one of the numerous acres with no change in the total amount of labor and capital employed. For instance, each acre of Grade A land together with the labor and capital employed yields 45 bushels, so that total output from Grade A land is 450,000 bushels. To find how much of the total production one acre is responsible for, the labor and capital employed on that acre must be distributed over the remaining

9999 acres. When three units of labor and capital, or expenditures of \$30, are spread over these remaining acres, the spreading is so thin that the marginal production of labor and capital would remain substantially the same as before, namely 10 bushels for each unit. If, then, the withdrawal of one acre together with its labor and capital reduces the total production by 45 bushels or to 449,955 bushels, and if the displaced labor and capital is redistributed over the remaining acres so that each unit contributes substantially 10 bushels each, the total production on the 9999 acres is increased by 30 bushels or to 449,985. This amount is 15 bushels less than before the acre was withdrawn. Consequently, the 15 bushels may be said to be the marginal production of an acre of land. With a selling price of \$1 per bushel the productivity of the acre is \$15, which constitutes the economic rent. The amount of rent, it will be noticed, is the same as that estimated by the other method. By a similar analysis, the marginal productivity of an acre of Grade C land would be found to be \$10, or the same as with the previously used method.

*Different Uses of Land.* It has thus far been noted that the fixed aggregate quantity of land and the existence of different grades of it were important factors in explaining land rents. There remains to be considered the fact that there are different uses for the same land. This affects the quantity of available land and its grades, and permits the multiple use of land in some cases.

(a) *Quantity Available.* If in addition to fixing the aggregate quantity of land, one were to fix the quantity to be used for any particular purpose, the rent for each type of land would be determined somewhat independently of that prevailing for other types of land. If consumers came to prefer corn bread to wheat bread there would be a shift in demand between the two products. But with a fixed amount of land suitable only for corn raising and a fixed amount suited only for wheat, the rent for land used in growing each crop would be independent of rent obtained for land used in growing the other crop. In other words, high rent for corn land would in no way affect the

rent received for wheat land. Similarly there would be no connection between rentals of land used for factories, offices, stores, and residences. With a fixed amount of each type of land, the rent for each would be governed by the demand for it alone, with such variations in rent as reflected the superiority of the better land over the poorest no-rent land.

Since most land is not so highly specialized that it can be used for only one purpose, there is generally a schedule supply for a particular purpose. The quantity available for that purpose tends to vary directly with the price for the use of it. In 1929 only one third of the land physically capable of producing crops was actually used in this way. Another third was in pasture and needed only to be put into crops, while the remaining third required irrigation, drainage, and forest clearance. There is also potential shifting between agricultural, commercial, and residential uses. This does not mean that all land is potentially available for any use. For wharfage purposes only land along navigable bodies of water can be used. But sites which are suitable for wharves may also be used for other purposes, so that for both wharves and other purposes the amount of available land is not rigidly fixed.

When land can be used for alternative purposes the rents for different purposes are not determined independently. The demand schedule for each use continues to be dominated by the marginal productivity of land employed for that purpose. And, although there is a schedule supply for each use, the rent at which various quantities become available for one purpose depends on how much can be got for the land if it is employed for an alternative purpose. Land suited for raising wheat may also be used for growing flax, and, according to the United States Department of Agriculture, changes in flax acreage are closely related to the expected return on flax in comparison with that of spring wheat. Thus, the two uses of the land come into direct competition, and from the expected returns arise the derived demand for the use of the land. These anticipated returns from competing crops affect the distribution of land as between wheat and flax and also the rent got for either use of the land.

In order for rents to be interrelated, the entire amount of land suitable for one purpose need not be suitable for the other. Although the requirements for flax growing and for wheat raising are not sufficiently similar to make all land suitable for the one crop suitable for the other, there is some land so situated that it can be used for either purpose. A comparatively small amount of such borderline land may serve as the connecting link between the rent which tends to prevail for land used in raising flax and that used for growing wheat.

(b) *Grades of Land.* The fact that most land has alternative uses also has a bearing on the grades of land, and consequently on their rent. Roughly speaking, land is graded on the basis of fertility and of location, with the former particularly significant in the extractive industries and the latter more important for land employed for other purposes. On either basis, however, the particular use for which the land is wanted influences its classification. High-grade mining land may be poor-grade land for agricultural purposes; the best grade for growing cranberries is worthless for many other crops; high-grade commercial sites are often low-grade residential locations. Consequently, land which is no-rent land for one purpose can be high-rent land for another. There is also some land in the country which is no-rent land for all purposes. However, with changes in the methods of utilizing land, as has been seen, land which is worthless at one time comes to be useful at another and may yield appreciable rent. In any event, land tends to be used under the classification for which its productivity is highest and hence for which it commands the greatest rent.

(c) *Multiple Uses of Land.* Not only are there alternative uses to which most land can be put, but there are possibilities at times for simultaneously using the same area of land for different purposes. This occurs when mining operations are conducted below the surface and the surface is employed in the raising of crops; as space for buildings, houses, and other structures; or in the construction of roads. The Waldorf-Astoria Hotel in New York City is built over the tracks of the New York Central Railroad. When an area of land can be used

for two or more purposes simultaneously the rents are not necessarily interrelated.

#### B. MODIFYING FORCES

Probably to a greater extent with land than with other factors of production, the basic competitive forces are modified by other forces, with the result that prevailing rents show less tendency toward their competitive level than do wages and interest. Among the modifying forces are monopoly, speculation, differences in management, and the inability to estimate accurately the amount of rent:

*Estimating Economic Rent.* Even though there are difficulties in estimating with reasonable accuracy the share of total production contributed by any one factor of production, the difficulties are greatest in the case of land. And although they are no greater in estimating rent when land is used by its owners than when it is leased, the need for estimating is greater when a charge is being made in the use of the land. At times forces which can be neither controlled nor predicted upset the calculations on which commercial rent is based. This occurs particularly with agricultural land, whose productivity is influenced not only by the market conditions but by freakish changes in rainfall, sunshine, and temperature. The fact that the customary conditions are known does not provide any assurance that the customary conditions will prevail in any particular year. Consequently, the rent charged may be in excess of the economic rent in one year and below it in another.

Moreover, close adjustments cannot be made in the amount of land which is coordinated with the other factors of production. This applies somewhat in the case of capital, but ordinarily to a less degree than with land, and the promptness with which workers can be hired and discharged makes much closer adjustment possible in dealing with labor than in dealing with land. Seldom can land be added or released in just the amounts which might be most advantageous. A merchant might need only 50 square feet more of floor space but the least he may be able to get is an adjoining store with 500 square feet. Tempo-

rarily, at least, he may pay more rent for the additional space than its productivity at the time justifies. Finally, capital is often so completely or intimately interwoven with land that there is no practicable way by which the rent of land can be separated from the interest on the capital.

*Differences in Management.* The amount of total production which can be got with the use of a given piece of land depends on the efficiency with which the land is used in combination with the other factors of production. In estimating the productivity of land, the owner can assume that the land will be used only with average ability. If the average level rises, the economic rent increases, and if the average level declines, the rent falls. In so far as some of the competitors for the land are more efficient than others, the owners are not in a position to claim a share of the greater production resulting from better management. It is also true, however, that better management tends to compete only for better land and the poorer management has a chance only at the poorer land. Since the average level of ability among those competing for the better land is higher than the general average, their rivalry for the land places the owners in a position to claim more as rent than would otherwise be possible. On the other hand, when less efficient managers seek the poorer land, the owners of it must claim less than if higher-grade management also sought the land.

*Monopoly of Location.* Closely associated with differences in managerial ability in some cases is the exercise of monopoly power in determining the rent of land. This is more likely to occur when location is of dominating consideration than when fertility is required. Through the use of capital, fertility can often be created, but seldom can location be created by those who want it. Moreover, in many cases, for both commercial and residential sites, not merely a location but a particular location is wanted. Those in possession of that location are in a position to charge more for it than would be possible if that location were in direct competition with other sites. This often applies in the leasing of corner sites for retail purposes in cities.

It is well known that some chain-store enterprises, notably those engaged in retailing cigars and cigarettes, are seldom interested in leasing property which is not a corner site. Even in the absence of their competition, the rental for these locations would be higher than for adjoining property in most instances, but with some bidders wanting only a particular location the owners of it are in a position to command a higher price than would otherwise be possible. Owners of wharfage sites are in a position to command more for their land than if other land could be brought into use. The existence of a railroad siding along a manufacturing plant often enables the owner of the location to obtain a higher rent than if these facilities were available to other plants also. The fact that the owner is in no way responsible for the siding does not alter the importance of it for that particular location, and the owner is in a position to derive benefit from the investments of others. In some places zoning laws restrict the uses to which land can be put. Whatever the social advantages of zoning may be, the regulations serve to restrict the amount of available land for certain purposes and thus give rise to higher economic rent than would otherwise exist.

*Speculation.* Especially prominent in the case of land is the influence of speculation in determining rentals for its use. Owners of land do not necessarily employ it in the way which will yield the largest immediate returns if those returns restrict their freedom to dispose of the property quickly when the opportunity to do so arises. Valuable sites are often used for open-air parking spaces when the income derived therefrom may not even cover the taxes. The temporary losses are expected to be more than recovered in the future selling price of the land. Residential property is often found in commercial areas renting at less than could be got if the location were used for a commercial purpose. The anticipation of future sale at a figure which will more than cover the sacrificed rentals prompts the owners to lease the property on distinctly temporary terms, so that it can be sold quickly when an attractive offer is made. The reason speculation is so conspicuous in the

case of land goes back to the fact that its aggregate quantity is limited, and that where location is a dominating consideration there are rather rigid limits to the number of highly desirable sites. Under the pressure of a growing population and increased business activity requiring more land there is a persistent tendency for the scarcity of land to increase; hence there are opportunities for speculative gains.

### III. FUNCTION AND OPERATION OF RENT

#### A. FUNCTION OF RENT

*Directing Force.* In view of the scarcity of land there is particular need for some means by which land will be allocated to the uses in which it can be employed most productively. There is economic waste of the natural resource when too much is devoted to agriculture and too little to maintaining forests, or when too much is used for business establishments and too little for residential purposes. Some device is essential for directing land into its most beneficial use.

Roughly speaking, there are two ways in which land may be allocated to the purposes for which it would be most beneficial to society. One is to have a central authority dictate the ways in which particular pieces of land shall be used. Certain areas would be designated for parks and playgrounds, certain other areas for residences, still others for various types of business. That there would be difficulties encountered in carrying out such an arrangement does not alter the fact that it is one way in which land might be distributed so as to serve the needs of society. Another way is to allow rent to operate as a guiding and directing influence. Under this arrangement individuals would be given considerable freedom in deciding how the land would be used. Those wanting particular pieces of land would be able to get it only by paying the rent which represented the productivity of that land. Thus rent would function to distribute the use of land.

Rentals are relied upon almost entirely to direct the uses to which land is put when the land is privately owned. It is

assumed that the rental got from different uses of land reflects the directions in which the greatest need for additional land exists. If land for raising fruit and vegetables commands a higher rent than land used for staple crops, this is taken as an indication that the need for more land is greater in the former than in the latter use. If commercial sites yield more rent than residential ones, this indicates that the need for more land is greater for commercial than for residential purposes. Hence private owners in seeking the most remunerative use for their land, whether they employ it themselves or lease it, are presumed to make it available in the use which yields the greatest rent. Thus, in seeking their own self-interest they are presumed to be acting in such a way as to allocate land to various purposes in proportion to the needs of society.

Despite the importance of rent as a directing force and the reliance placed upon it under private ownership of land, its operation is far from satisfactory. There are several outstanding reasons for this. One is that many owners of land continue to employ it for the same purpose after the need for it ceases. This is notoriously true with land employed in the extractive industries. Farms and mines are operated not only when they fail to yield a rent but even when they fail to compensate fully for the labor and capital employed. So long as the selling prices of the products more than cover the "out of pocket" expenses, there is a tendency for the land to remain in use. Only when the selling price fully covers the labor and capital employed can there be said to be demand for the land, except during periods of distinctly temporary maladjustment.

In addition to this, the use of long-term leases and speculation prevents rentals from serving as a directing force. When land is leased for such periods as 99 or 999 years it is usually impossible for the use of land to be shifted in accordance with demands for the most economical use of the resource. Similarly, when land is deliberately withheld from temporarily remunerative uses in expectation of greater gains in the future, there is no current adjustment between the amount of existing land and the needs for it. Some persons, including Pro-

fessor Ely, have attempted to justify land speculation by contending that it provides for the "ripening use of land." Just as time is required for crops to mature, so, with the passing of time, more valuable uses for land develop. The validity of the analogy to the ripening of crops seems highly questionable except in special circumstances. Waiting is essential for crops because they cannot be used until they mature in a physical sense, but not so with land. Moreover, deliberate withholding of land contributes to the scarcity by which the value of it is increased. Virtually the entire social justification for withholding land for future use depends on careful planning for the benefit of society as a whole. Only if one has a blueprint of the future is there fairly definite knowledge of when and how land is to be used, so that in the meantime the land can be employed in such ways as will not interfere with society's needs.

However, it is in connection with social planning that rent is conspicuously unsatisfactory as a directing force. It is utterly amazing how valuable land becomes overnight when there are indications that a particular site will be required for some public improvement, such as a highway, bridge, park, or museum. Immediately there are false leases and contracts which make the land appear vastly more valuable than it has ever been in any commercial use to which it has been put. Unless the manipulation can be proved, which is often difficult, the prices asked for the land on the basis of spurious investments and rentals make improvements too costly to be carried out in the manner and to the extent which would be advantageous and beneficial to society as a whole.

*Basis for Determining Land Values.* Since land as a natural resource has no cost of production and no replacement cost, there is no cost basis on which the selling price of land can be determined. However, land, like most other forms of productive property, is wanted for the income or gain which it yields. In so far as income is the guiding consideration, the purchase price for land is determined by capitalizing the net rent at the current rate of interest. Thus if land yields a net rental of \$400 a year and the current rate of interest is 5 per cent,

the capitalized rent would amount to \$8000. In other words, if \$400 is 5 per cent or  $1/20$  of an unknown amount, that amount is 20 times \$400 or \$8000. If this price is paid for a piece of land, its net rent will yield a 5 per cent return on the investment. The higher the rate of interest, the lower the selling price of land; and the lower the rate of interest, the higher the selling price. Thus, if the prevailing rate of interest were 10 per cent, the capitalized value of the rent would be only \$4000, while if the interest rate were 2 per cent, the value would be \$20,000.

If, however, the present net rent is not expected to be that of the future, or if the future rate of interest is expected to be different from that prevailing at present, these are complications which enter the calculation of present selling prices. Suppose there is reason to believe that before many years the net rent of the piece of land referred to above will be \$800, the owner of it would not sell on the basis of the present rent of \$400 capitalized at the current rate of interest, or at least would not sell except under the necessity of obtaining immediate cash. On the other hand, suppose future rents were likely to be only \$200, prospective buyers would be unwilling to offer a price based on present rent. The same is true of prospective changes in the prevailing rate of interest. In both cases allowances would be made for the expected changes which might or might not materialize.

#### B. OPERATION OF RENT

Payments made for the use of land, like payments for other factors of production, have aspects of cost and of income. The same payment which constitutes a cost to one party constitutes income to another. The twofold operation of rent, however, has some distinctive features which deserve mention.

*Rent as Cost.* The significance of rent as an item of cost depends on the influence it has on selling prices of goods. There is considerable controversy as to whether high rents are responsible for high prices or high prices are responsible for high rents. Merchants in small towns often allege that their selling

prices are lower than those in larger cities where rents are higher. This suggests that higher rents are responsible for higher prices and lower rents give rise to lower prices. Other merchants who charge more than is charged in larger places justify their higher selling prices on the ground that they do not do the volume of business which is done by merchants in larger cities.

The fact is that neither rents nor volume of business considered separately have any bearing on selling prices. How heavy a rental burden is carried by any individual concern depends on the amount of the rental in relation to the volume of business done. This is equally true of prices. From the standpoint of individual concerns, rental expenditures operate in the same way as expenditures for any other factor of production. The heaviness of a rental burden on a concern depends on the amount of the rental in relation to the volume of business. If \$1000 a month is paid for a location for a cigar store and the rental for another is \$10, the burden per unit of sales may be the same if the former does 100 times as much business as the latter. If, however, for every dollar of sales at the latter location there is \$200 of sales at the former, the rental burden at the \$1000 site is relatively less than at the \$10 location. But if the sales on the high rental land are only \$50 for every dollar of sales at the low rental location, the burden of the low rental is less per unit of sales than that of the higher rental.

In any event, the rental burden on individual concerns has little or nothing to do with the issue of whether high rents cause high prices or high prices cause high rents. It is true that for the individual enterprise, rental constitutes a cost of production. If the rental were not paid, the enterprise could sell goods at a lower price and more than cover its other costs. The mere fact that a concern could make money by selling at a lower price in the absence of rent does not mean that it would sell at a lower price. Whether or not rents are responsible for higher prices does not depend on whether rentals increase costs for individual concerns, but on whether the rentals increase costs in such a way that higher market prices

result. From this point of view both assertions have merit, depending on the surrounding circumstances. Under some conditions high rentals are entirely the result of high prices, while under others high rents contribute to high prices.

(a) *Single Use of Land.* If land were suited to only one purpose, say mining coal, and if the available coal lands were operated competitively, rentals or royalties could not cause selling prices of coal to be higher than they would be in the absence of rents. High rents would be the result of high selling prices. In the first place, it must be remembered that under competition rent cannot develop until the land is utilized beyond the point of diminishing returns. If, when one coal mine is shut down and the labor and capital employed in it are distributed among the remaining mines of a company, as much coal is produced as before, the selling price of coal covers only the marginal costs for labor and capital. The situation is different, however, when the demand for coal is such that mines must be operated so intensively that either diminishing returns or increasing unit costs are encountered. The same aggregate production could not be obtained under these circumstances by withdrawing a mine and redistributing the labor and capital among the remaining mines. The loss in production would represent the economic contribution of a mine to the total production of coal and would constitute the economic rent of the mine. This would be true even if all mines were of uniform quality.

When there are mines of different qualities, the poorer ones cannot be operated until the market price at least covers the cost of labor and capital employed. When the price reaches this level, owners of the poorer mines can obtain a return for their managerial services and the capital they employ as well as pay the labor they hire. There is no rent for those mines whose costs for labor and capital are just being covered by the selling price of their product. These mines, however, contribute to the aggregate production of coal. Also, they make possible a lower cost for the marginal production (which just balances demand) than if that production had to be

obtained by utilizing the better mines still more intensively. Since it is the marginal costs that selling prices tend to cover and since rent played no part in determining the marginal costs, there is no way in which rents can increase selling prices.

(b) *Alternative Uses of Land.* When, however, there are alternative uses to which the same land can be put, rent enters by the back door to raise selling prices. The reason that rent can increase selling prices is that the rent of land for any one use must be the highest possible from among the several uses to which the land might be put. Suppose the increased demand for gasoline causes the productivity of land for filling-station uses to increase and brings this use in direct competition with that for retail stores. The higher rentals yielded by filling-station sites would prompt a shifting of land from store sites. To meet the demand for retail stores, the remaining sites would be used more intensively with increasing unit costs. These higher costs for marginal production would result in higher selling prices on the basis of the existing demand, although the volume of sales would decline somewhat. Under the pressure of higher prices, still poorer grades of land would come into use as retail sites. Front rooms of homes and similar locations may be brought into use as stores even though the income will compensate only for the labor and capital employed leaving nothing as a return for the land. Then too, with higher prices, retail sites which were formerly on the no-rent margin now yield a rent. With the advent of the new no-rent land and the offering of goods for sale on those sites, the quantity of retail services increases slightly and market prices slide down a bit. But the new level of prices is higher than before the increased demand for gasoline sites enabled retail sites to have higher marginal productivity and hence command higher economic rent. The rental which is primarily responsible for the higher prices of goods sold on retail store sites is that offered for filling-station sites. Expressed differently, the rent which increases selling prices is that which could be got for land if it were used for a filling station rather than as a store site. Consequently, when land can be used for any one

of several purposes, the rent offered for the most productive use causes higher selling prices because it controls also the rent gained when the land is employed for an alternative purpose. In the illustration used here, gasoline prices are not higher because of the larger rentals bid for filling-station sites, but these higher rentals operate indirectly to cause higher prices for the goods sold by retail stores.

*Rent as Income.* The peculiar significance of rent as income does not arise from the way in which it is spent. Like income from other sources, a part of it is spent for consumable goods and a part is saved. It is probable that a larger portion is saved than is spent. If so, in this respect it resembles interest, which is also a type of property income. If not, the disposal of rent corresponds more closely to wages. In either event there is nothing distinctive with respect to its disposal.

At the same time, there is no other type of income which is so vigorously attacked as is rent. In this respect rental income is somewhat distinctive, although it shares some of these honors with interest. On the one hand, it is charged that rent from land is a form of exploitation in that it causes selling prices to be unnecessarily high. On the other hand, there is the claim that rental income is unearned. The first charge is not entirely valid. Only under some circumstances can rent increase selling prices in the absence of monopoly. Even if the land were governmentally owned, some basis for allocating land to various uses would be needed, and probably no more satisfactory basis could be obtained than charging enterprises for the use of land according to its estimated economic rent. Consequently, while the rent in that case would go to the government or the people collectively, it would have the same influence on most selling prices as when administered through the competitive use of privately owned land. The charge that rental income is unearned has a far sounder foundation.

The reason economic rent constitutes unearned income to private owners of the land arises out of the peculiar nature of land as a form of property. All other kinds of property involve costs of production for their creation. Not so with natural

resources. Neither labor nor savings are responsible for their existence. The existence of ownership does not increase the amount of land, nor does the absence of ownership diminish the amount. The fact that individuals may have used their savings to purchase land and are receiving only a modest return on the investment does not affect the unearned nature of rental income. Nor is the unearned status of the income affected by the fact that individuals may be using the land they own instead of leasing it. It is true that the economic rent represents the contribution of the land to production, but the service has been performed by the natural resource and not by the persons receiving the income for the service provided by nature.

The attack on private income from land does not rest solely on the fact that natural resources exist without any human cost of production, but also on the fact that society as a whole rather than the owners are responsible for such value as land possesses. It has been seen that rent cannot arise until land is sufficiently scarce for it to be utilized beyond the point of diminishing returns. This scarcity develops under the pressure of a growing population. Since the land is relatively fixed in aggregate amount, the increased demand for goods which require the services of land causes the productivity of land to increase and its economic rent to rise. Thus, society as a whole, instead of the landowners, is responsible for the rise in economic rent which the private owners receive as income.

Even if it be admitted that income from natural resources is unearned and should be eliminated, there remains the extremely difficult task of eliminating it. Aside from political considerations, the paramount economic difficulty is how to separate income received as rent from that received as interest or wages. In this connection it is essential to bear in mind that many forms of income are called rent which are not economic rent. Only the distinctly economic rent, or that arising from the scarcity of natural resources, constitutes unearned income in the sense that the rental payment is not essential

either for the existence of the resource or for the service which the resource is capable of yielding in producing consumable goods. But before the unearned income can be eliminated, it must be separated from other forms of income such as interest and wages. This is by no means an easy task in many cases. It has been noted that capital and natural resources are often so intermingled that separation is virtually impossible except on an arbitrary basis. With such separation the amount eliminated as rental income may encroach on that produced by capital. In so far as savings are compulsory this encroachment would not necessarily operate to curtail the expansion of capital but it would operate to do so when savings were voluntary and especially if the voluntary savings were not automatic.

### QUESTIONS

1. "The economic meaning of land is broader than the popular meaning." Explain and point out the reason for the broad economic meaning of the term.
2. What is meant by economic rent?
3. Is there reason to believe that rent would be paid if there were a fixed amount of land possessing uniform quality for any particular purpose? Explain, and if rent would be paid, point out how the amount of rent would be determined.
4. When land of different grades is available for a particular purpose, what determines the degree of intensity to which each grade is used?
5. What is meant by the statement that "the poorest grade of land brought into use serves to reduce the pressure on better grades, but the owners of the poorest are not in a position to obtain any rent"?
6. "Rent of land is possible only when diminishing returns develop, and then as the land is used more intensively the economic rent increases." (a) What is meant by diminishing returns? (b) Why must there be diminishing returns before economic rent arises? (c) Why does economic rent increase with more intensive utilization of the land?
7. Economic rent may be viewed in two ways. (a) Explain each view. (b) Are the views inconsistent?
8. Is there any reason for believing that the quantity of available land is influenced by the amount of rent offered for its use?
9. "When land can be used for alternative purposes, the rents for different purposes are not determined independently." Explain.
10. "Determining the grade or quality of land is difficult because of its alternative uses." What does this statement mean?

11. How, if at all, does multiple use of land differ from alternative use?
12. What circumstances make the estimating of economic rent difficult?
13. "The efficiency of management in the utilization of land has no bearing on the economic rent." Evaluate.
14. "Monopoly influences are more likely to affect the rent of land where location rather than fertility is a dominating consideration." Do you agree? Give reasons.
15. "Speculation in land is sometimes responsible for lower rents than would otherwise exist." Explain the reason for this.
16. What is meant by the statement that "rent functions as a directing force, although its functioning is not entirely satisfactory"?
17. "The value of a piece of land is determined in the same way as the value of a house." Do you agree? Give reasons.
18. "Even though individual concerns consider their rent as a cost, this does not mean that rent necessarily increases costs in a way which gives rise to higher selling prices for goods." Explain.
19. What is the line of reasoning employed to show that the selling prices of goods produced with the use of land are not increased by the payment of rent when land is available for a single purpose, but that the selling prices are increased when the land is available for alternative purposes?
20. What reasons are there for considering land rent as unearned income?

## CHAPTER XXV

### PROFITS

THE quest for individual gain has caused human beings to engage in all sorts of activities in all parts of the world. Men have served or have destroyed their fellow men and have developed or have wasted natural resources, depending on which course of action offered greater opportunity for gain. This same stimulus, which has encouraged man to conquer nature and increase standards of living, has also contributed to the bloodiest and most destructive war of all time and to the severest economic depression that history records.

#### I. MEANING AND NATURE OF PROFITS

##### A. MEANING OF PROFIT

Viewed broadly, profits may be said to constitute the difference between income and cost. There are, however, two kinds of differences. The costs may exceed the income, in which case there is a negative difference, or loss. This difference is sometimes called negative profit, although it is usually referred to as loss. Or the income may exceed the cost, in which case there is a positive difference, or gain. The term profit generally refers to the positive rather than to the negative differences; to the gains instead of to the losses.

Despite the persistent quest for profits, there is often much uncertainty as to when they have or have not been acquired. Not infrequently profits are said to exist when in reality they do not, and at times they exist when they are said to be absent. Much of this confusion arises from the fact that the term profit is used with different meanings. A distinction of fundamental importance exists between what may be called pure profits and what may be called business profits.

*Pure Profit.* Reference is seldom made in the business world

to pure profit, even though this type of profit plays an important part in influencing the expansion and contraction of production in any line of activity. A comparatively simple illustration will serve to disclose the underlying idea. Suppose an individual engages in business for himself by selling fruits, vegetables, flowers, and plants at retail. The individual owns a piece of land which he uses as an open-air market, and he rents a store adjoining his property. He invests \$3000 and employs several clerks. At the end of the year he prepares the following statement of income and outgo:

Income	Outgo
Sale of goods.....\$21,000	Cost of goods sold (expenditures less inventory).....\$15,000
	Wages of clerks.....2,000
	Rent of store.....1,200
Less cost of sales....18,500	Light, heat, taxes.....300
Profit.....\$ 2,500	Cost of sales.....\$18,500

He finds that with all his bills paid he has \$2500 more cash than at the beginning of the year with an inventory about equal to his original investment. He calls the \$2500 profit from the year's operation.

Although the purpose of the proprietor may be served adequately by considering as profit the difference between total income and cash expenditures less inventory, these expenditures do not constitute total costs. In the first place, the proprietor has invested \$3000 on which he could have obtained interest had he lent the amount rather than used it himself. In the second place, he has used a piece of land which he owns. Any rent he could have gotten by leasing it must be considered as a cost when he uses the land instead of leasing it. In the third place, the proprietor furnishes managerial services to his own enterprise, and allowance must be made for the wages he could have obtained had he hired out his services. Finally, depreciation must be taken into account for any equipment he owns and uses in the business. Not until these items are added to the cash expenditures attributed to sales is it possible to determine whether or not there is any pure gain. On this

basis the proprietor draws up the following revised statement of earnings:

Income	Cost
Sale of goods . . . . . \$21,000	Cash expenditures . . . . . \$18,500
	Return to proprietor:
	Wages of management . . . . . 1,800
	Rent on land . . . . . 200
	Interest on investment . . . . . 180
	Depreciation . . . . . 120
Less total cost . . . . . 20,800	
Gain                                    \$ 200	<u>\$20,800</u>

When allowance is made for the services contributed by the proprietor and his property, the pure gain is \$200. This is all the proprietor has in excess of that which he could have had by hiring out his services, lending his funds, and leasing his property. The balance of the \$2500 originally designated as profit is actually a cost, even though it may not be considered as such.

Instead of pure gains there may be pure losses. Suppose that the revised statement of earnings for the same individual were as follows:

Income	Cost
Sale of goods . . . . . \$21,000	Cash expenditures . . . . . \$18,500
	Return to proprietor:
	Wages of management . . . . . 2,400
	Rent on land . . . . . 200
	Interest on investment . . . . . 180
	Depreciation . . . . . 120
Less total cost . . . . . 21,400	
Loss . . . . . \$ 400	<u>\$21,400</u>

The only change in cost has been an increase from \$1800 to \$2400 in the proprietor's wages of management. But this change alone has been sufficient to cause a pure loss of \$400 even though the proprietor received \$2500 more cash for his goods than the cash he expended in purchasing and marketing them. Allowance for the same items of cost which previously caused an apparent profit of \$2500 to shrink to \$200 net gain now causes the apparent profit to become a pure loss of \$400.

The costs, which are often omitted in calculating profit but which must be taken into account in determining pure profit,

are not always capable of being estimated with a high degree of accuracy. Difficulties in estimating depreciation have been mentioned previously. In estimating the value of his services and that of his property, the proprietor cannot merely assign arbitrary values to them. Nor is he justified in assigning such values as he thinks they ought to be worth. Most people are inclined to think the value of their services and of their property greater than the competitive market assigns to them. It is only this competitive worth that can be included as a cost. The amount that would be offered competitively for his managerial services in a similar business constitutes by implication the amount his services are worth in managing his own enterprise. Similarly, whatever return he could obtain on his savings if they were lent with a similar degree of risk to that encountered in his own business is the amount of interest he is warranted in assigning as a cost. In the same manner the rental value of his land must be determined.

*Business Profit.* Although the idea of pure profit is very useful for some purposes, it is not the idea behind profits as they are usually calculated by individual enterprises. For the purposes of these enterprises, attention is centered on business profits. Such profits are based on a narrower view of cost than are pure profits. Just what items of cost are excluded depends on the particular purpose for which the profits are being estimated. The most frequent purpose is that of determining how much is available for the use of the owners, whether they be proprietors, partners, or shareholders.

But business profits are not calculated only for the purpose of showing the amount available to owners. Some concerns derive income from investments in other concerns as well as from their own operations, so that a distinction is often drawn between operating profits and total profits. Then, too, concerns may set aside reserves for obsolescence and for repayment of bonded debts, and a distinction may then be drawn between profits before and after the establishment of reserves. The net earnings for purposes of taxation may be quite different from those used for profit sharing or for dividends.

There is a difference between pure and business profits, not only with respect to the items included as cost, but also with respect to the amounts which can be considered as cost. In considering pure profits it is assumed that enterprises compete for workers, land, and capital. Consequently, the prices they contract to pay in wages, rent, and interest are determined by market forces. Competitive compensation is also used in determining the cost which can be attributed to the owners for their services and for that of their property. The depreciation allowance is the actual deterioration, or loss in value, as nearly as it can be determined. But not so with business profits. Any price which the enterprise pays for the things it buys or hires is considered as cost, whether or not the price is excessively high. When a holding company charges its subsidiaries excessive prices for certain services rendered to them, the amounts actually paid constitute their costs, even though these be greater than the amounts for which the same services could have been obtained elsewhere. It has already been seen that competition is conspicuously absent in the case of much executive labor, and in some cases management decides its own compensation. Consequently, there are various ways in which profits may be drained even for legally contracted obligations such as wages of the management. Depreciation also offers abundant opportunities for manipulating business profits. Current profits are reduced on financial statements when excessive depreciation is recorded, and through inadequate allowances for depreciation, the gains may be made to appear larger than is actually the case and the losses smaller than they are in reality.

#### B. NATURE OF PROFITS

*Profits a Contingent Share of Production.* It will be recalled that under the traditional system of *laissez faire* unlimited gains were permitted, but no assurance was given to those who engaged in business that they would not sustain losses instead of gains. The expectation of gain rather than the assurance of it served as a stimulus to incur obligations and assume risks.

The fact that individuals spent long hours of arduous toil prospecting for gold gave them no claim to any return for their efforts unless their efforts were crowned with success in obtaining the precious metal. In the conduct of enterprises the fact that wages have been paid to labor, interest paid for borrowed funds, and rent paid for leased property gives those who have made the payments no economic, legal, or moral claim to even sufficient income barely to cover the costs thus incurred. If income exceeds these costs there is something remaining which those who have furnished their services and that of their property, are in a position to claim, although the services and capital were furnished on the basis of expected, rather than assured, compensation. Pure and business profits are both contingent on the margin between income and cost, although the items and amounts constituting income and cost are not necessarily the same for both types of profit.

Despite all the expectation of profits, the losses or negative profits are encountered more frequently than is generally realized. Although income tax returns are not entirely satisfactory for comparisons in this connection, they throw a cer-

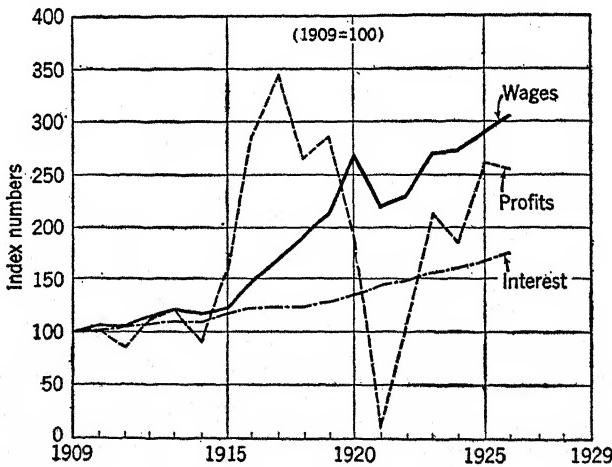


FIGURE 74. HIGHLY FLUCTUATING CHARACTER OF BUSINESS PROFITS AS COMPARED WITH WAGES AND INTEREST

From *National Income and Its Purchasing Power*, by National Bureau of Economic Research, pages 132, 186, and 278.

tain light on the uncertainty of profits. As against 270,000 corporations with taxable net income in the fairly prosperous year of 1929, about 187,000 had no such income. An examination<sup>1</sup> of dividend payments of some 700 companies to common stockholders for the three years 1927-29, inclusive, indicates that 256 companies paid no dividends in any of the years and only 278 paid dividends in all three years. It is, of course, quite possible that there were profits without dividends, but the absence of dividends is unlikely in the face of any appreciable profit.

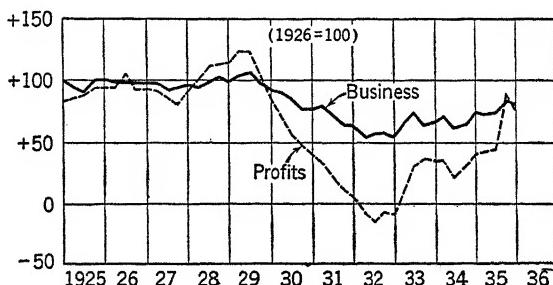


FIGURE 75. BUSINESS ACTIVITY AND BUSINESS PROFITS

Reprinted from National City Bank of New York Bulletin.

*Variation in Amount of Profits.* Since profits are contingent in nature, it is not surprising that they are variable in amount, although the extent of variation is likely to be overlooked. Indeed, profit is the most highly variable part of the national income. This is suggested by Doctor W. I. King's estimates of wages, interest on funded debts, and net income of corporations for the period between 1909 and 1936, as shown by Figure 74. Interest on funded debts followed a continuous upward course; wages fluctuated somewhat, but profits are conspicuous by their extreme fluctuations, with the index falling within a single year from 203 to 17 and then rising the next year to 166.

Business profits tend to reflect in a much magnified manner changes in the volume of business activity. This is indicated in Figure 75, in which the *Annalist* index of business is com-

<sup>1</sup> W. A. Paton, *Corporate Profits as Shown by Audit Reports*. 1935.

pared with the index of profits for two hundred leading corporations as reported by the National City Bank of New York. A slight upward movement in business activity causes a decided increase in profits, whereas a decline in activity brings a proportionately greater fall in profits.

The highly fluctuating nature of profits is due largely to the fact that many expenses of operation are somewhat independent of changes in the volume of business, so that total costs rise and fall less rapidly than corresponding changes in the amount of business. Take, for instance, a concern in which the owners have a \$500,000 investment with gross sales of

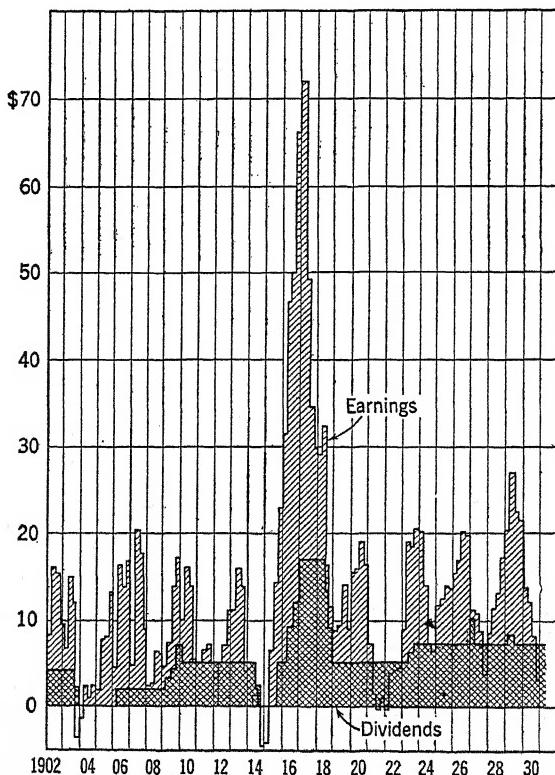


FIGURE 76. EARNINGS AND DIVIDENDS PER COMMON SHARE OF UNITED STATES STEEL CORPORATION STOCK

Reprinted from Cleveland Trust Company Bulletin.

\$1,000,000 and total expenses of \$950,000, leaving a profit of \$50,000, or 10 per cent on the investment of the owners. If sales increase only 10 per cent to \$1,100,000, expenses may increase only 4 per cent to \$988,000. The resulting gain of \$112,000 is about 22 per cent on the investment. But if sales and expenses had declined by the same percentages, the sales would have been \$900,000 with costs of \$912,000. Instead of a gain there would have been a loss of 2.4 per cent, amounting to \$12,000. Thus a small change in the volume of business may be accompanied by large changes in profits.

A concrete illustration of the variable nature of profits is furnished by the United States Steel Corporation. The rate of net earnings per share of common stock for this prosperous concern is shown by quarters for a period of nearly thirty years in Figure 76. In the first quarter of 1902, the earnings were such that had they continued throughout the year they would have provided \$8 per share of common stock. In only six quarters during the entire period were losses sustained. From a few dollars a share in periods of depression, the earnings rose to between \$15 and \$20 a share in most periods of prosperity. The profitability of the World War to this concern is quite evident with its earnings skyrocketing in one quarter to a level of over \$70 a share. The shaded portion of the chart shows the rate at which dividends were paid per share of common stock.

Not only do profits vary from time to time, but at any given time there are wide variations both between individual concerns within an industry and between industrial groups. A study of the crude petroleum industry by the Federal Trade Commission indicated that with an average return of 11 per cent for the entire industry, individual concerns ranged from losses of nearly 100 per cent to gains of 282 per cent. An analysis by the National City Bank covering 2010 corporations in 1935 indicates an average gain of 5.1 per cent. Some branches, including coal mining, construction, railroad, and real estate, suffered deficits, while other groups had business gains ranging from 1.3 per cent for iron and steel to 29 per cent for fire and

## PROFITS

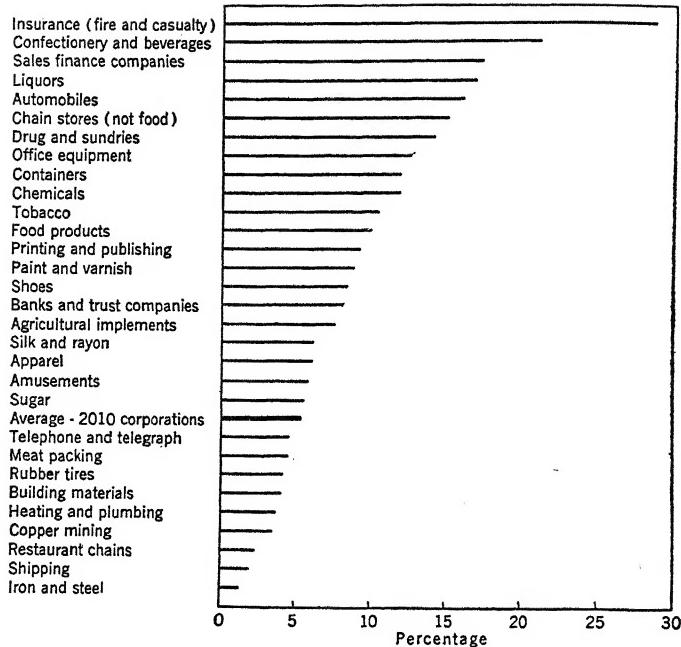


FIGURE 77. RATE OF BUSINESS PROFIT FOR SPECIFIED GROUPS OF INDUSTRIAL CORPORATIONS, 1935  
Data from National City Bank of New York Bulletin.

casualty insurance companies. The relative standing for some of the groups with positive profits is shown in Figure 77.

If longer periods of time are considered, the conspicuously large variations in net earnings persist. Professor Epstein in his study of industrial profits found that for 3144 large manufacturing, trading, mining, and finance corporations, stockholders averaged a return of 10.7 per cent on their equity in 1928. There was substantially the same average return for the ten-year period 1919-1928. Between individual years, however, net earnings ranged from 2.4 per cent to 12.8 per cent. When the corporations were combined into 106 groups, the average earning rate in 1928 ran from 1.3 per cent to 27.3 per cent and for the decade 1919-28, the range was substantially the same, running from 1.9 per cent to 31.6 per cent. The most common rate for the decade was between 10 per cent and 15

per cent, although 20 industrial groups earned less than 10 per cent and 29 per cent of the industrial groups earned more than 15 per cent.

*Necessity for Profit.* It is quite customary to assume that gains are essential to the conduct of business enterprises. The validity of this assumption depends on the type of gain being considered and the surrounding circumstances, including the period of time involved and the manner in which enterprises are conducted.

(a) *Relative Importance of Pure and Business Profits.* In so far as individuals engage in business and remain therein only so long as they tend to receive as much for their services and property when used by themselves as when used by others, there is a tendency for pure profits to be eliminated under perfect competition. The pure negative profits, or losses, serve to cause enterprises to withdraw from those lines in which selling prices do not fully cover costs. The withdrawal of these enterprises reduces the volume of goods offered for sale in relation to a given demand, with the result that prices rise sufficiently, under perfect competition, to cover the cost of marginal production. When pure positive profits occur, there is an incentive for new enterprises to be established. These enterprises seek to share the pure profits prevailing in the industry. In 1935 considerable fear was expressed by executives in the field of casualty and fire insurance that the large gains of that year would stimulate the formation of new companies. Many executives urged a voluntary reduction of insurance rates so that the very large pure gains would be reduced and thus the creation of new enterprises in the field would be discouraged. When pure gains exist in competitive branches of business, they operate to increase the available quantity of goods in relation to a given demand. The result is that selling prices tend to fall to the point where total costs of marginal production are barely covered. Thus pure profit serves a useful purpose in directing the expansion and contraction of production in particular businesses, and especially so among private enterprises. Only when the conditions of

demand get out of balance with those of supply is there necessity for pure profit, either negative or positive.

With business profits the situation is different, since they include elements of cost. It has been seen that the contribution of labor to production is not dependent on whether workers are self-employed or are employed by others, nor is the contribution of land and capital dependent on whether it is used by owners or by borrowers and tenants. In so far as profits represent the necessary compensation for the continued use of productive factors, the profits are essential for the continued creation of goods. To the degree that business profits include elements of necessary costs, there is no tendency for the profits to be eliminated by competitive forces.

(b) *Importance of Profits over Varying Periods of Time.* The prospect for temporary pure profit may be highly essential as an inducement for enterprises to provide additional facilities for producing old types of goods or in providing the initial facilities for new types. If a concern can put a new product on the market before potential rivals are in a position to provide facilities for producing it or a substitute, there may be prospects of large pure gains. But after facilities for production have come into existence, neither pure nor business gains are essential for continued production during short periods of time. In the chapter dealing with cost of production attention was called to the fact that there are times when operating at a loss may be more advantageous than ceasing operation either temporarily by shutting down or permanently by abandoning an undertaking. Such operation under a loss is especially likely to occur when investments have been made for a particular purpose and cannot be readily withdrawn in the absence of a satisfactory return. Indeed, there are conditions under which greater production may come forth when losses are being sustained than when gains prevail. It is well known that farmers often seek to minimize their losses in the face of falling prices for their crops by producing more to be sold at the lower prices.

In addition to inability to withdraw investments there are

other circumstances which prompt some enterprises to operate for a number of years in spite of losses. One of these is lack of knowledge as to the costs of production. Not infrequently concerns do not even know their total cash costs, to say nothing of others. Incredible as this may seem, it is true, although to a diminishing degree under the present pressure of preparing income tax returns. Instances also occur where individuals prefer to be in business for themselves and are willing to accept less for their services than they could obtain as employees. Pride of owners and managers may also keep enterprises in operation despite persistent losses, although in these cases there is likely to be the hope that in time conditions may improve.

Whatever circumstances may prompt individual concerns to continue operations in the absence of either pure or business gains, this situation is not characteristic of enterprises in general. Although pure profit (positive or negative), from any source tends to be eliminated over a period of time under the influence of competition, business gains are necessary in the long run to the extent that they represent essential costs of production. Enterprises cannot persistently remain solvent and disregard depreciation as a cost. If income provides for depreciation, the accumulated reserves may be used either to purchase new equipment which may materially reduce costs and thus make gains possible. Or, if prospects for future gains are slight, the funds may be used to purchase new equipment with which the enterprise will engage in some other business which offers better prospects for positive profits. In this event, the withdrawal from the enterprise will tend to create a greater scarcity of goods there in relation to demand and thus operate to reestablish business gains. The entrance of new competitors in other enterprises operates to make more goods available in relation to demand and serves to force selling prices down. In doing so pure gains, if they exist, are reduced; if they do not exist, the lower prices create business losses.

(c) *Profit in Private and in Government Enterprises.* Such importance as profit has in the production of goods is restricted to private enterprises, and does not extend to government oper-

ations unless the government decides that its activities shall be guided in the same way as under private enterprise. While pure profit serves to direct expansion and contraction of production under privately conducted activity, this directing function is not essential to determine the forms of government activity. Decisions to expand or contract production can be made independently of gains or losses. Even business profits which represent necessary returns on investment under private operation may be disregarded when enterprises are conducted by the government in order to benefit society as a whole. Some types of activity may be deemed so essential for the public good that they would be conducted in expectation of losses, as, at present, in the case of the mail service, while other activities which are deemed less essential from the standpoint of public service would be conducted with a view to providing gains to offset these losses. In short, governmental as well as private enterprises involve costs, and so long as consumers remain free to buy as they see fit, there will be gains and losses; but these do not necessarily serve to guide governmental activity as they do private enterprise.

## II. SOURCES AND DISPOSAL OF PROFITS

### A. SOURCES OF PROFITS

Attention from this point on will center on the positive profits which enterprises seek. In the quest for them, individual enterprises at times find it easier to reduce costs than to increase income, although both may serve as routes to the same destination.

*Economies.* In the conduct of private business, economies usually refer to the reduction in unit cost, either through paying less for the things which are purchased, hired, or leased, or through utilizing with greater effectiveness these things together with those furnished by proprietors, partners, and shareholders. Among the more important circumstances contributing to such economies are the efficiency of management and the size of enterprises.

(a) *Managerial Efficiency.* One of the most conspicuous differences between enterprises is the varying efficiency of their management. It will be recalled from an earlier discussion that this efficiency depends not only on the knowledge, experience, and judgment those persons in control are capable of exercising, but also upon the interest and initiative with which the abilities are exercised. Capable management will direct the activities of the enterprise into those channels which are most advantageous to it, by anticipating changes in demand and by preparing to furnish the things consumers want. It is in this connection that many opportunities for speculative profits arise. In whatever activities the enterprise engages, management will bring together the productive agents, such as labor and capital, in the most economical combination. Efforts will be made to obtain commodities, such as labor, materials, and equipment at the lowest prices consistent with economical operation. A watchful eye will be directed toward detecting and eliminating waste. Improved methods of production will be adopted as rapidly as technical, financial, and human limitations permit. These points have already been discussed in a previous connection and need not be elaborated here.

(b) *Size of Enterprises.* The opportunity for some economies arises out of circumstances surrounding the size of the business. It has been seen that most enterprises doing a small volume of business cannot carry specialization of labor and capital to the point of maximum advantage even with efficient management. This is especially so where the economies require the use of expensive equipment. Ordinarily, materials and supplies cannot be purchased in small quantities at lowest prices. Since small concerns are not in a position to buy large quantities (except through cooperative purchases), they are forced to pay higher prices than would otherwise be necessary. Then, too, enterprises doing a small volume of business are not in a position to employ the high-grade executive and technical ability which large enterprises can afford.

Although large enterprises may have some economies not

enjoyed by small ones, the important point is whether there are net economies or merely economies in some directions offset by increasing wastes in others. From this standpoint there is conflicting evidence which suggests that there is no consistent relation between size of enterprise and the profits which may accrue. The existence of large chain-store enterprises is often thought to reflect their greater profitability by comparison with smaller chains. The efficiency of large-scale management, rather than the operating efficiency of the separate units, is supposed to be the chief source of gain. But a survey by the Federal Trade Commission indicates different tendencies with respect to profits and size. Grocery chains with 2 to 5 stores were nearly as profitable as chains of 101 to 500 stores, the returns being 17 and 18.2 per cent respectively, while the chains of over 1000 stores had substantially the same return (12.8 per cent) as chains of 6 to 10 stores. With variety chain stores having a \$1 price limit, the largest return was with chains of over 1000, but the return for smaller chains fluctuated. For dry goods and apparel, chains of 101 to 500 stores were distinctly more profitable than either larger or smaller chains.

When manufacturing corporations are considered, the advantage of size would seem to be much overrated as judged by the results of 2046 concerns.<sup>1</sup> Those with total capital of less than \$1,000,000 had earnings in 1924 of 18 per cent, as compared with 9 per cent for those with capital of over \$1,000,000. In 1928, the respective rates of return were 15 and 10 per cent. Those having capital of less than \$500,000 had a return of about 20 per cent in both years, while those with capital of \$50,000,000 had returns of approximately 8 and 10 per cent in the respective years. Although the general tendency is for the extremely large concerns to be less profitable than smaller ones, there appears to be a point in some cases where the profitability of large concerns tends to increase and then decline. As shown in Table 14, the rate of return for enterprises with total capital of between \$25,000,000 and \$50,000,000 is larger than for those with capital of between \$5,000,000 and \$25,-

<sup>1</sup> Ralph C. Epstein, *Industrial Profits in the United States*. 1934.

000,000 or for those with capital of \$50,000,000 or over. This may be accounted for by the fact that these statistics combine businesses in which different tendencies are in operation, but when the tendencies in food, chemical, and metallurgical manufacturing are separated, the results are not appreciably changed.

TABLE 13. PROFITS OF MANUFACTURING CORPORATIONS, 1924 AND 1928

Amount of Total Capital (millions)	1924				1928			
	All Types	Foods	Chem- icals	Metals	All Types	Foods	Chem- icals	Metals
Under 0.5	20.3	24.3	42.1	16.9	20.2	22.6	68.4	16.7
0.5-1.0	17.7	20.0	29.4	16.0	13.4	13.6	18.0	14.2
1.0-2.5	15.4	16.1	17.7	14.7	13.6	12.2	15.7	15.7
2.5-5.0	12.9	10.5	11.7	15.2	14.0	14.9	20.6	15.4
5.0-25.0	9.5	10.3	11.8	9.1	9.7	8.8	13.6	10.6
25.0-50.0	12.6	12.7	12.2	12.9	11.8	13.6	11.5	12.6
Over 50.0	8.1	8.8	7.9	8.0	9.8	9.5	10.6	9.6

*Restriction of Competition.* There are opportunities for profit to those possessing the superior power which may arise from deliberate interference with competitive forces or from the existence of unequal bargaining power between contracting parties. Mention has already been made of the influence of good-will, trademarks, brand names as a means of increasing gains, especially with the aid of advertising. Privileges such as patents, copyrights, and franchises operate to furnish monopoly profits, as do combinations of those enterprises which are in a position to control prices through their control over production. Weak bargaining power on the part of workers often enables business profits to be increased because employers pay less for labor than they would be willing to pay, if necessary, for the same number of workers under other circumstances. Lack of knowledge on the part of consumers enables enterprises to profit through predatory activities involving misrepresentation and fraud. In the presence of knowledge on the part of investors, gains through financial manipulation of enterprises would be greatly reduced, if not eliminated.

*Fortuitous Events.* Whether or not war can be considered a strictly fortuitous event, it is so with respect to profits for many

enterprises. Few events provide greater monetary gains, especially in the case of concerns in a position to furnish the necessary financial and material sinews for the conflict. The suffering, death, and waste of resources, together with the economic losses to both victors and vanquished after the struggle, do not prevent large profits from arising during the hostilities.

Discovery and inventions are, at least in part, fortuitous sources of profit. But the gains can scarcely be considered as compensation for these efforts, since others are likely to have worked as intelligently and strenuously without encountering the opportunity which proved profitable. Doctor Mees, Vice-President of the Eastman Kodak Company and Director of its Research Laboratories, is reported as viewing research mainly as a gamble, with the chances of success little better than even. It is that little difference which may give rise to tremendous profits.

A rising general price level, as has been seen, contributes to profits both in times of war and of peace. Goods are produced largely in anticipation of demand. Selling prices of goods are likely to rise faster than labor, materials, and other costs of production, thus increasing the profit. Not infrequently supplies of raw materials and semi-finished goods are acquired in periods of depression when prices are low, and then sold in the form of finished goods at a later time when prices are higher. In so far as funds are borrowed in periods of depression with low interest rates, the property acquired with these funds increases in value and in earning possibilities as the price level rises, despite the fact that the cost of the property does not increase, since the lenders continue to receive the previously agreed upon number of dollars.

Floods, earthquakes, hurricanes, and similar disasters also play a part in furnishing profits to particular enterprises whose goods are needed as a result of the disaster. It is truly an ill wind from which no one benefits. The necessity for reconstruction diverts purchasing power from some businesses into others. Immediately following the floods which ravaged various parts of the United States in 1935, fifty kinds of equipment

and materials were reported in heavy demand. At about the same time, a news-letter of the United States Department of Commerce called attention to the "new emergency markets created by flood." The letter ended with the notation, "As this goes to press, news of the tornado in the South indicates other emergency markets for repair of \$25,000,000 damage...."

In those businesses dominated by styles and fads, the unstable nature of demand distributes profits without much regard to the efficiency with which enterprises are conducted. For example, in the manufacturing of fur garments there is considerable specialization of concerns based on different kinds of furs. There are "fox houses," "mink houses," and "squirrel houses." There is, however, no possible way of determining in advance of the selling season what particular fur will strike the public's fancy that year. Some furs of all kinds will be sold, but most, if not all, of the houses specializing in the fur of the season are in a position to make large profits, while most other manufacturers are thankful if they do not suffer losses. The houses experiencing the largest profits this year may be the ones suffering the severest losses next year.

#### B. DISPOSAL OF PROFITS

Whatever the source of profits, the gains which are considered the earnings of an enterprise may be dispersed in different directions. In some instances the disposal of the gains constitutes substantially a final allocation and payment of certain costs at the end of the accounting period. But the disposal may constitute more than this.

*Retained Profits.* The right to retain profits in a business depends somewhat on the legal form of the organization. Proprietors of individual enterprises have the sole right to decide how much, if any, of the profits are to be kept in the business. The provisions of the partnership agreement must be followed in disposing of the gains of such an organization. In the case of corporations, the directors have considerable discretion in disposing of profits, but their decisions are subject to certain limitations. On the one hand, the law in this country re-

quires that earnings be retained if the money capital of the corporation has been impaired. On the other hand, the directors cannot retain profits if by so doing the rights of stockholders are impaired. The persistence of Henry Ford in plowing earnings back into the business in which he had a major financial interest resulted in a suit for dividends by the Dodge brothers. The court ordered Ford, as controlling stockholder, to cause his company to pay dividends, whereupon he acquired the Dodge holdings of stock. Courts, however, have been reluctant to substitute their judgment for that of directors.

In so far as directors have discretion in retaining profits, any one or more of several purposes generally prompt the retention. In some cases the purpose is to increase the fixed assets. When this is done, the shareholders generally receive stock dividends, so that at least technically the profits have been distributed and then reinvested. Another purpose is to furnish the enterprise with additional working capital. When funds are retained for this purpose, they are given some special designation such as surplus or reserve for working capital. The third purpose is that of providing for future dividend payments, and for this purpose the gains are also transferred to special accounts such as those called undivided profits.

With the discretionary power in the hands of directors and with stockholders often unable to control the action of the directors, an opportunity arises in some cases for profits to be retained in order to protect large shareholders from taxation. These large holders are subject to heavy taxes on income received, and so long as corporate earnings are not distributed, these shareholders are subject to lower taxes than if the earnings were distributed. This method of tax evasion on the part of the wealthy has been one reason for the recent tax on corporate surpluses.

*Distributed Profits.* Although many enterprises retain some of their profits, the distributed portion is, at least in the aggregate, a more significant amount. The channels of distribution may or may not be determined entirely by legal claims.

(a) *Governmental Claims.* Although not ordinarily the

largest in amount, government tax claims usually take precedence over other claims, and always over the claims of owners. In 1929, federal taxes on corporate incomes amounted to \$1,200,000,000, or slightly more than the amount retained as corporate surplus. Viewed differently, the tax amounted to about 10 per cent of the net income reported by the corporations paying income taxes. Professor Epstein's study of 3144 companies indicated that, for the group as a whole, federal income taxes reduced returns on investment by slightly over 1 per cent. In 1928 they were reduced from 10.7 to 9.6 per cent,

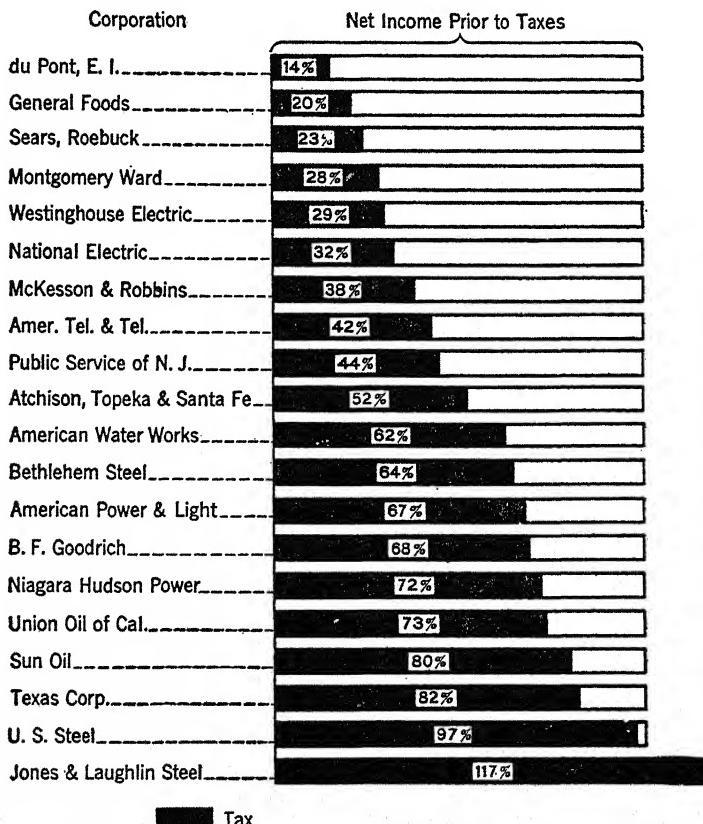


FIGURE 78. NET INCOME BEFORE AND AFTER TAXES, 1935

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and for the decade 1919-28 from 10.5 to 9.2 per cent. In addition to federal taxes there are state and local taxes.

For individual enterprises, taxation may claim widely varying proportions of their net income. This is illustrated in Figure 78, for twenty large corporations in 1935. Federal, state, and local taxes claimed only 14 per cent in the case of du Pont, whereas Jones and Laughlin Steel Company had to delve into surplus to meet its tax obligations. In part, at least, these variations in the proportions of net income claimed by taxation arise from different accounting methods and policies among concerns in determining their net incomes. For instance, if a concern decided to set aside an amount for obsolescence equivalent to 40 per cent of its earnings in a particular year, it would have the legal right to do so, but would not be permitted to make this deduction from net income for purposes of taxation.

(b) *Creditor Claims.* Whenever enterprises make contracts for hiring labor, borrowing funds, or leasing property on the condition that compensation is contingent, in whole or in part, on business earnings, there arise creditor claims to profits. Bondholders are among the creditors who generally have no claim of this kind, and yet holders of participating bonds do have such claims. They not only are entitled to a fixed minimum rate of return, but also have the right to participate in earnings when the profits exceed a specified level. Management claims are the most prominent. It has been seen that in some cases the salary for management is insignificantly small in comparison with the profit-sharing bonuses. Just how extensively management derives its compensation on a contingent basis is not at present known. Lawsuits and governmental investigations have brought to light some instances of extreme abuses in which the management often assumes that the enterprise exists for its benefit. Not until 1935 did the Federal Government regulate the marketing of securities so as to compel concerns to report compensation of any kind paid to executives.

Although the management group is the one to which legal claims to profit-sharing as a form of compensation are generally

restricted, there are other circumstances under which workers participate in profits. If the weekly or monthly wages and salary constitute all the employer agrees to pay, any further payments are entirely voluntary. Additional payments, however, may be essential for creating good-will on the part of the workers, and in so far as this is advantageous to the employer, the payments constitute a type of compensation even though not contractual in nature. If not essential, the payments constitute merely a gratuity on the part of the employer.

(c) *Owners' Claims.* The claims made by owners on business profits are of two types, the one legal and the other economic. The economic claim rests on the contribution which the owners have made to production. With personally owned enterprises the contribution, it will be recalled, generally includes personal services and that of property. Unless over a period of time the return to proprietors and partners at least equals the combined amount they could get for their services and property used in some other way, there will be a tendency for the enterprise to be discontinued. They will either transfer their services and property to some other business or hire out their services, lend their funds, and lease their land and buildings. To proprietors and partners it is the combined return which is important rather than the amount which might be attributed singly to their services or to their investments. In the case of corporations having separation of ownership and management, the economic claim is based almost entirely on the investment.

The economic claim of shareholders to profit as a return on investment depends on whether they are in a position to withdraw their investment from the enterprise. In so far as they are in a position to withdraw the use of their funds and property, they must receive, over a period of time, a return on the investment equal to that which they could obtain by lending the funds or leasing the property employed in the enterprise. To the extent that they are not in a position to withdraw the investment, they have no economic power on which they can base their claim to a return. If the return they are receiving is

unsatisfactory, they can liquidate their individual claims through sale, but this does not involve a withdrawal of the investment from the enterprise, and the new owner would have no greater economic claim than the former holder of the shares. This does not mean that the new owner may not obtain a larger return on his investment than the former owner obtained on his. The low earnings of the enterprise will depress the market value of the shares to a point at which the dividends paid will tend to furnish a satisfactory yield to new purchasers of them.

The legal claim of owners is somewhat different. However large the competitive worth of their funds and property may be, owners have no legal claim to a return on their investment until provision has been made for other legal claims of a contingent character. On the other hand, even though the owners, by virtue of their inability to withdraw their investment, may have no basis for an economic claim, they may have a legal claim. Furthermore, although the economic claim never exceeds the competitive worth of the savings or property furnished by the owners, legal rights impose no such limits. The owners are in a legal position to claim any residual income, however large it may be.

(d) *Customer Participation.* In some instances concerns voluntarily share profits with their customers, although not necessarily on a contractual basis. For instance, it is reported that the Campbell Soup Company purposely restricts its profits to six tenths of a cent per can. This is accomplished in two ways. First, price lists to dealers are adjusted from time to time according to fluctuations in material, manufacturing, and other costs. In addition to this, any profit at the end of a year in excess of the established margin is refunded to dealers on the basis of their purchases during the previous year. The purpose of so restricting profits is purely economic in that it holds competition in check. A maximum margin of slightly over half a cent a can is believed to be adequate to prevent serious competition from developing.

In the absence of voluntary participation by customers there is compulsory participation in pure profits. This comes about

through the operation of the competitive forces which voluntary participation may hold in check. Pure profits from any given source are necessarily temporary under competition. Rivalry among sellers causes prices to consumers to be cut to at least the point at which no pure gain remains. As profits from one source thus pass from enterprises to their customers in the form of lower prices, new sources of pure profit take their place, only to be ultimately converted into reduced prices to consumers. Individual concerns and industries alike may have pure profits for many years, although the sources from which these gains arise at one time cease to be the sources from which they arise at another. Consequently, the condition may result in a dynamic world of pure profits tending to be eliminated as individual phenomena but persisting as group phenomena.

### QUESTIONS

1. "Not infrequently profits are said to exist when in reality they do not, and at times they exist when they are alleged to be absent." What circumstances give rise to such uncertainty as to whether or not profits exist?
2. Distinguish between pure profits and business profits.
3. "Profits are merely the difference between income and costs." Evaluate.
4. "Profits may be positive or negative." Explain.
5. "Profits are necessarily a contingent share of the national income." Why, if at all, are profits a contingent share?
6. "The expectation rather than the realization of profit is important for business conducted under a system of private enterprise." Do you agree? Give reasons.
7. "Business profits tend to reflect in much magnified manner the changes which occur in the volume of business." Explain.
8. What accounts for the highly fluctuating nature of business profits?
9. "Competition results in fairly uniform profits both between enterprises within an industry and between industries." What validity, if any, does this statement possess?
10. What light does a distinction between pure and business profits throw on the controversy of whether or not profits are essential for the conduct of business?
11. How does the element of time affect the necessity for profits?
12. "So long as consumers have freedom of choice, government enterprises as well as private enterprises run the risk of losses." (a) What

- is meant by consumers' freedom of choice? (b) What connection, if any, is there between such freedom and either losses or gains?
13. "If business is to be conducted on a sound basis, profits are as essential for government enterprises as for private ones." Do you agree? Give reasons.
  14. Is there any reason to believe that economies of management and of size constitute permanent sources of profits to individual enterprises?
  15. "Whereas competition tends to eliminate profit, the restriction of competition tends to perpetuate profits." Explain.
  16. "Misfortune is often a source of profit under the existing methods of conducting business." How, if at all, do the existing methods of conducting business enable profits to arise out of misfortune?
  17. "The right to retain profits in a business depends somewhat on the legal form of business organization." Explain.
  18. Under what circumstances may creditors share in the disposal of profits?
  19. "Owners always have a legal claim but not always an economic claim to a return on the investment." Explain.
  20. What is meant by the statement that "Customer participation in profits may serve as a means of holding competition in check"?

## CHAPTER XXVI

### TAXES

WHATEVER views individuals may hold as to the proper scope of government operations, the fact remains that they have been increasing both in prominence and in complexity. This has not resulted from deliberate planning, but from the increasing intricacy of economic life which makes inevitable a closer relation between the economic affairs of the people and the government.

#### I. GENERAL CONSIDERATIONS

In conducting its activities, the government lays claim to a share of the national income through the medium of taxation. This medium is intended for different purposes, involves different theories, and is applied in different ways, at different rates, and with differently distributed burdens.

##### A. MAJOR PURPOSES OF TAXATION

Considered broadly, all taxes are for the purpose of enabling the government to do those things which are presumed to be in the interest of the general welfare. To this end taxes may be used for revenue or for regulation.

*Revenue.* Without funds at its disposal, the government is unable to perform its function of promoting the general welfare. Even though opinions may differ as to the particular ways in which the common good can best be advanced, funds are needed to finance virtually any activity which is undertaken. This need has been recognized and provided for through the taxing power. In interpreting the taxing power of the Federal Government, the United States Supreme Court has held that the power to tax is the power to destroy. In other words, there is no constitutional limit to taxation for any

purpose which falls within the range of federal authority. The same policy applies with respect to the sovereign states.

*Regulation.* When the welfare of the people is deemed to require regulation, this may be done through the medium of taxation. Only one or two aspects of such regulation need be mentioned here. The actual extent to which taxation may be used for regulation is somewhat greater when the tax legislation of certain kinds does not indicate specifically that its purpose is regulation. The reason for this is that the power to tax is limited to such purposes as the government has constitutional authority to control. Thus, the Federal Government's power to regulate international trade carries with it the power to impose tariff duties, and these can be imposed to the point at which foreign trade would be destroyed. But it is doubtful that the Supreme Court would sustain the right of Congress to impose taxes on wealthy individuals for the purpose of eliminating inequality of income. All taxes, however, have certain incidental influences, and if heavier taxes for revenue are placed on the wealthy than on the poor, the regulatory influence which is incidental thereto is permissible.

At the same time, taxation with a double purpose is likely to encounter obstacles. If the stated purpose of the tax is to raise revenue and the real purpose is obviously regulation, the courts usually have decided the constitutionality of the tax on the basis of the real purpose. This occurred when the Federal Government sought to curtail the use of child labor by imposing a tax on goods moving in interstate commerce when child labor was employed in the production of the goods. The Supreme Court held that the obvious intent was to regulate child labor in the process of production and that the Federal Government did not have jurisdiction over manufacturing within the several states. The Guffey Coal Act provided a tax on coal companies, most of which was to be refunded if the companies complied with the regulation specified in the Act. In declaring this legislation unconstitutional, the Court held that the tax was a penalty for purposes of regulating something which did not fall within the jurisdiction of Congress. In the

absence of legal obstacles, economic difficulties may arise. In order to be effective as a regulatory device, the tax may yield little or no revenue. Higher customs duties cause the volume of importation to become smaller so that a smaller amount of revenue is obtained. Attempts have also been made to tax liquor in order to raise revenue and regulate aspects of manufacture and distribution. In an attempt to obtain large revenue, prices have at times been raised to a point at which bootlegging is encouraged, with the result that regulation is defeated and the tax revenue lost.

#### B. THEORIES AS TO WHO SHALL BEAR TAXATION

In order to understand some of the variations in tax levies, it is necessary to realize that there are different theories as to who should pay taxes and how much each should pay. Some taxes are imposed according to the benefit theory, some on the basis of ability to pay, and still others on the inability to resist the imposition of a tax.

*Benefit Received.* In promoting general welfare, the benefits of governmental activity are not always shared equally by all persons. On the assumption that people receiving benefits from the government are able to pay for them, taxes may be levied according to the benefit received. For example, in this country the government is specifically charged with protecting life, liberty, and property. There is no way in which to determine whether life is more desirable to one person than to another. Consequently, all are presumed to receive equal benefits in the protection of their lives, and for this protection would pay equal taxes. A similar situation exists with the protection of personal freedom. But when liberty is extended to the making of contracts, the protective benefits are more apparently unequal. An individual who contracts for the sale of his services and from the contract derives an income of \$50,000 a year is presumed to receive more benefit from the government's willingness to enforce contracts than does an individual whose contract for service yields only \$1000 a year. Consequently, according to the benefit theory, the former should be taxed more

heavily than the latter. Likewise, there are differences in the benefits received through the protection of physical property. One individual may own property valued at \$500,000 and another own only his home, valued at \$5000. The former is presumed to derive more benefits from fire and police protection than the latter, and he would be taxed accordingly.

*Ability to Pay.* The benefits of most governmental activities cannot be traced to particular individuals, nor can the benefits be evaluated in monetary terms. The benefits of public education are not restricted to those receiving the education nor to their families, but are shared by society in general. Even when it is possible to trace benefits to particular individuals there is no feasible way to determine the amount of the benefit. Fire protection benefits those who do and those who do not own property, although there is no way of estimating the benefit to tenants of an apartment house as compared with those to the owners of the property. Presumably all citizens benefit by the existence of an army and navy, yet there is no possible way of determining the extent of the benefit to particular individuals. In some cases, the governmental activity is deliberately intended to care for those who are unable to care for themselves, as in the operation of poorhouses. Under these various circumstances taxes are often levied on the basis of ability to pay. Those who can afford to pay more taxes than others are compelled to do so without any regard to the individual benefits received. Thus the tax burden is presumed to be equal even though the amounts paid in taxes are unequal.

*Inability to Resist.* Some taxes are levied without regard either to benefits received or even to ability to pay, unless the meanings of "benefits" and of "ability" are stretched to absurd limits. Especially in times of governmental deficits the tax-gatherer may levy in any direction which offers a possibility for revenue, regardless of the sacrifice which may be involved in paying the tax. The most numerous instances of this occur in connection with the consumers' sales taxes. During the depression following 1929 many states levied such taxes as a means of obtaining funds with which to finance unemploy-

ment relief. The necessity for individuals to spend money for the taxed goods assures prompt revenue from the tax. Not only are there many more persons with small than with large incomes, but those with small incomes usually spend proportionately more of their income for the taxed goods than do persons with larger incomes. Hence the burden falls most heavily on those least able to bear it. But their inability to organize effective opposition to the tax results in their having to bear the heavy burden.

### C. TYPES OF TAXATION

No matter what the general theory for taxation may be, there are different items to which a rate can be applied. From this standpoint three types of taxation can be distinguished: those which center on income, those which center on property, and those which center on transactions, activities, and practices.

*Income.* When the purpose of taxation is to raise revenue and when the burden is imposed according to the ability to pay, income furnishes as satisfactory a guide to ability as can be found. In the case of personal incomes the test is not entirely satisfactory, since there are widely different obligations and responsibilities among individuals with the same income. There is also a minimum income below which the imposition of any tax imposes an excessively heavy burden at the same time that it yields very little revenue. Consequently, most personal incomes are subject to certain exemptions. Under the federal tax law, the exemption is \$1000 for single persons and \$2500 for those who are married or are heads of a family. For corporate income taxes there is no need for any exemption, unless for administrative purposes, although here allowances must be made for costs incurred in acquiring the income. These allowances must also be made with personal incomes when, in the practice of a profession, individuals rent offices, hire secretaries, and invest in equipment.

*Property.* In some cases taxes are applied to property which is owned. The earliest taxation involved land and buildings, now commonly known as real estate. Gradually other kinds

of property were included, such as house furnishings and such claims to wealth as stocks, bonds, and mortgages. When a tax applies to all property, other than that which may be specifically exempted, the tax is designated as a general property tax. When only certain kinds of property are subject to the tax, the tax is designated by the particular thing to which it applies.

Whether or not ownership of property constitutes a satisfactory base for taxation depends largely on the purpose of the tax and the theory on which it is levied. In so far as taxes are intended to raise revenue and to reflect ability to pay, ownership is no necessary indication of that ability. This is especially so in periods of depression when many persons own property from which they derive little or no income. In earlier days when the ownership and use of property were linked more closely, the amount of property was probably a fairly good index of ability to pay taxes. If the owners had no money, they had an opportunity to "work out" their taxes in such ways as repairing roads. This still occurs in some rural areas, although it is not feasible in urban areas. Unless individuals derive income from their property, or by the ownership of it avoid expenditures they would otherwise be compelled to make, as is the case with home-owners, there is no necessary connection between ownership of property and ability to pay taxes. Assuming connections where they do not exist may not only impose undue hardship on taxpayers, but may also cause the waste of natural resources. When taxes are levied on woodland rather than on the income therefrom, a pressure is put on owners to cut and sell at least enough lumber to pay their taxes even though market conditions do not justify the additional production. When the purpose is regulation, a tax on property, regardless of the income derived from it, may be effective. An instance of this is the inheritance tax, which is often designed, at least in part, to reduce the inequality of wealth and income. It has also been proposed to place such heavy taxes on land that at least the income derived from it would be confiscated. Under these circumstances, private ownership of

land would be unprofitable, and owners would turn it over to the government in payment of taxes.

*Transactions, Activities, and Practices.* Taxes are levied not only on property and income, but also on what persons buy and sell, what they do, and how they do it. Customs duties have long been used by the Federal Government as a source of revenue. These are viewed with favor by some because, in addition to furnishing protection from foreign competition, they are thought to impose a burden on the foreigners selling goods in this country rather than on the citizens buying the goods. Internal levies on the manufacture, sale, or consumption of goods, known sometimes as excise taxes, have come to be fairly numerous. Originally liquor was the principal item involved, but at present the list includes tobacco, playing cards, gasoline, automobiles, tires, mechanical refrigerators, radios, jewelry, furs, telephone calls, theater admissions, electric energy, and safe-deposit boxes. In some states there are general sales taxes, which tax all goods, except some specifically exempted. If individuals dispose of their property before death, they are subject to gift taxes, and if the disposal occurs after death, inheritance and estate taxes are imposed. When enterprises are organized as corporations they are subject to a capital stock tax. Stamp taxes are imposed on newly issued bonds and on the transfer of stock. In many communities mercantile taxes are imposed on all enterprises. Payroll taxes for unemployment insurance are the result of irregular employment of labor.

This assortment of taxes, as might be supposed, does not represent a carefully planned arrangement either for revenue or for regulatory purposes. Some are levied because the parties subject to the tax were not in a position to offer effective political resistance. Many have no justification other than that they provide funds quickly, and many incorporate characteristics not found in income or property taxes. Whereas at least a year elapses between the time an income tax law is enacted and the time revenue is derived therefrom, a very short time after a general sales tax is imposed, funds are flowing to

the taxing agency. If there is a blanket tax on all sales the burden falls most heavily on those least able to bear them; costs for effective administration of the tax are high, and in the absence of rigid enforcement evasion is widespread. If the tax is selective in that it applies only to certain goods, there develop types of discrimination which can be justified in most cases only on the basis of regulation; for instance, taxes on chain stores are intended mainly to curb that type of enterprise. The justification of taxation for purposes of revenue is sometimes more difficult; for example, a tax on fuel oil places that commodity at a competitive disadvantage to its rival coal, on which there is no similar federal tax.

#### D. BASES OF TAXATION

In addition to making certain things subject to taxation, there must be some unit or base upon which the levy is imposed. Some taxes are levied on a basis of capitation, some on a basis of quantity, and some on a monetary basis.

*Capitation.* Those taxes which are levied on a per capita basis are known as capitation taxes. The most familiar instance of this occurs in the poll tax, which, in some places, is imposed on all adults and in others only on those who vote.

*Quantity.* Some objects of taxation can be measured in physical quantities, so that at times these units are made the basis for taxation. For instance, the import duty on certain kinds of leaf tobacco has been \$2.27 a pound, on flaxseed, 65 cents a bushel, on olives, 20 cents a gallon, on crude petroleum, 21 cents a barrel, and on pig iron \$1.12 a ton. In the transfer of no-par stock, the share is used as the basis for a tax of 2 cents a share.

*Money.* Whether the objects of taxation can be measured physically or not, the tax may be levied on a monetary basis. At times this is fairly simple, as with taxes on sales. The monetary value of each transaction is definite, so that no problem arises in determining the amount upon which taxes are to be levied. In connection with income taxes the difficulties are somewhat greater because of allowances which

must be made in arriving at the net income subject to taxation. The greatest difficulty occurs in connection with property taxes. In so far as personal property is concerned, there are really two types of difficulty: the location of property, and the valuing of it. First, the property must be located before it can be assessed. Many forms of property, such as a diamond, can be easily concealed. Bank deposits may also be under fictitious names. A tax on objects which can be concealed always places a premium on dishonesty and evasion. This defect does not exist in the case of a tax on real estate, but here, as well as in connection with a tax on personal property, there are difficulties in determining the valuation for purposes of taxation. Usually the law provides for assessment at the market value. In the case of personal property individuals may be permitted to make their own valuation. For real estate the valuation is made by public officials. But this does not remove the difficulty which always exists when value must be estimated.

#### E. RATES OF TAXATION

No matter what the basis for taxation may be, there must be some rate at which the tax is imposed. Rates of three types are encountered; namely, uniform, progressive, and regressive. The type employed in any particular case is determined partly by the theory of taxation involved and partly by the purpose of the tax.

*Uniform.* When the tax rate is the same regardless of the size of the base to which applied, the rate is said to be uniform. This type is found exclusively with poll taxes and extensively with property taxation, especially that on real estate. When land and buildings in a community are taxed 15 mills on their valuation, the amount of the tax payment increases with the valuation, but the rate is the same for all taxpayers whether they own much or little property. Excise taxes often carry uniform rates; for example, the federal tax of 10 cents a pack on playing cards, the tax of 6 cents a pack on cigarettes of the usual size, the tax of 3 per cent of the sales price on passenger

automobiles, the tax of 24 cents a pound on tires, and the tax of 10 per cent on the rental of safe-deposit boxes. Income also may be taxed at a uniform rate. After certain exemptions and deductions are permitted, all personal incomes are subject to a federal tax of 4 per cent, regardless of size. In some states, such as Pennsylvania, constitutional provisions permit only uniform rates.

Since uniform rates are applied most extensively to property which requires valuation for purposes of taxation, there is occasion to note that the rate is not a reliable indication of the tax burden. This is shown most forcefully in the case of real estate. Although most laws provide for the property to be assessed at its market value, this is rarely done and is, in fact, rather immaterial. The lower the assessment, the higher must be the rate, and the lower the rate, the higher must be the assessment to yield the same amount of revenue. The differences in practice among communities mean that the tax rate in one may be double that in another, and yet, if the assessments in the first are half those in the second, taxpayers in the two communities have the same burden for property with similar market value. When, however, property subject to the same rate is not assessed in a uniform manner, real differences in burden exist, despite the uniformity of the rate.

*Progressive.* When the rate rises according to the size of the base to which the tax is applied, the rate is progressive. Rates of this type are encountered in connection with the federal income tax. In addition to what is known as the normal tax of 4 per cent on personal incomes, there are additional levies called surtaxes. These begin at 4 per cent on incomes of \$4000, and increase to about 73 per cent on incomes of \$1,000,000 or more. Corporate income taxes are also progressive. The normal tax begins at  $12\frac{1}{2}$  per cent on net incomes of less than \$2000 and increases to 15 per cent on net incomes of \$40,000 or more. Net incomes in excess of a 10 to 15 per cent return on the declared value of stock are taxed 6 per cent, and returns in excess of 15 per cent are taxed 12 per

cent. The surtaxes on profits when not fully distributed begins at 7 per cent on the first 10 per cent of the profits retained and rises to a maximum of 27 per cent as the proportion of profits not distributed increases. The federal estate tax begins at 25 per cent on the first \$10,000 (after allowing an exemption of \$40,000) and increases to 70 per cent on estates of \$50,000,000 or more. Rates for gifts made prior to death are also progressive, and are three fourths of those on estates. Similar types of rates are encountered among the states.

*Regressive.* If the rate, instead of increasing, decreases as the size of the base to which it applies increases, the rate is regressive. As a basis for obtaining revenue, this type of rate is generally considered to be highly unsatisfactory, although at times it is satisfactory for regulatory purposes. Such rates are seldom employed, since they tend to place the heaviest burden on those least able to bear it, but much the same result may be obtained in other ways, as will be seen presently.

#### F. SHIFTING OF THE BURDEN OF TAXES

Those from whom the government collects taxes are not necessarily the ones who ultimately bear the tax burden. For administrative simplicity there is an advantage in collecting a tax from as few parties as possible. Consequently, although a tax may be levied on the consumption of gasoline, instead of collecting the tax directly from consumers, the responsibility for the collection of the tax rests on the producers or dealers. The seller becomes the collecting agency, although he does not pay the tax except in the sense of making remittance to the government. Other taxes are levied with the expectation that those who pay them originally will shift them, while still others are imposed with the expectation that they will not be shifted. In effect, the nature of the tax determines whether or not it can be shifted in whole or in part. If, as a result of a tax, there are changes in the schedule demand, or in the quantity of goods produced, or in their costs of production, there are possibilities for the tax to be shifted. Those taxes which do not tend to be shifted are known as direct, in contrast to

indirect taxes, which tend to be passed on to others, usually in the form of higher prices.

*Direct Taxes.* Among those levies whose nature permits no shifting, or almost none, are taxes on personal property, incomes, land, and inheritances. A tax levied on personal property cannot be passed on, since the trading process has come to its end. When income is derived entirely from wages, the tax neither increases the demand for labor nor reduces the availability of workers; hence workers cannot command a higher competitive wage because of the tax. There is also no possibility of shifting a tax on monopoly profits, since the monopoly price already established tends to be the one which gives the greatest total net gain. There is no opportunity for shifting taxes on the business profits of competitive enterprises if the tax is applied to profits in excess of an adequate return to the investors. When the tax applies to the net income of enterprises before allowance has been made for a return to investors, there is a possibility of slight shifting. The tax may cause some producers sustaining high costs to withdraw from the industry, which would cause the quantity of production to diminish in relation to demand and selling prices to increase. Ordinarily the tax does not consume a sufficiently large portion of the income to cause much withdrawal of investments and hence provides only slight opportunity for shifting the burden. A tax on land or on the rent from it changes neither the demand for the resource nor the quantity of it that is available. Consequently, owners must bear the burden. Moreover, the owners of land at the time a tax is imposed bear the burden permanently. In selling the land the value will be determined by the previously described process of capitalizing the economic rent, but, since a part is taken in taxes, the net rent is the amount which is capitalized. Thus, the taxes which a subsequent purchaser pays are burdenless in the sense that they have been discounted in the price paid for the land. There can be no shifting in connection with inheritance taxes, since there is no selling price involved in the transfer of the property to the heirs.

*Indirect Taxes.* Although taxes seldom affect the demand schedule for goods, they often operate to increase cost and to diminish the availability of goods in relation to the demand for them. This occurs in connection with taxes on the manufacture or sale of goods and in connection with those on real property other than land. When a tax of one twenty-fifth of a cent a barrel is levied on the refining of oil, this applies alike to producers incurring high and low costs. In effect, it becomes an additional money cost of production and operates to raise the level of cost throughout the industry, so that some refineries operating under high costs will be driven out of business. This tends to reduce the volume of production in relation to demand, with the result that higher prices absorb at least a part of the tax. A tax on houses, stores, factories, machinery, and other man-made property tends to be shifted from the owners to the parties leasing property. In so far as such property is produced with a view to obtaining an income from it, the tax reduces the amount of income and operates to reduce the amount of available property. Sooner or later the wear and tear will require replacements if the same amount of property is to be available. But investors will seek more remunerative employment for their funds than such property provides. In time, the increased scarcity of this man-made property in relation to the demand will cause commercial rent, or prices paid for its use, to increase. The higher returns tend to provide as much interest on new investments as could be had in any other way and additional property is thus furnished.

The extent to which shifting is expedient depends somewhat on the nature of demand. If demand is highly elastic, an increase in price drastically curtails the quantity which will be purchased, whereas only slight curtailment occurs with an inelastic demand. Consequently, when all competitors are subject to a tax on the goods they sell there will be prompt shifting of virtually the entire amount when demand is inelastic, but with an elastic demand they will suffer severely by the reduced volume of business. In order to minimize the reduction in volume, especially when fixed costs are rela-

tively large, concerns may find that absorbing a part of the tax is advantageous to them.

When taxes are imposed which permit shifting, the extent of shifting is in no way dependent on the ability to bear the burden. The heavy taxes imposed on cigarettes are sometimes defended on the ground that the manufacturers can afford to pay them because of large profits. This is irrelevant. The issue depends on whether or not the nature of the tax is such that economic forces compel it to be borne by those who originally pay it.

Whatever merit indirect taxes may have, they possess the distinct disadvantage of creating false impressions as to the share of taxes paid by those with small incomes whose direct taxation is little if any. Andrew Mellon and others have complained bitterly against the "narrow base" of taxation, by which is meant that comparatively few people pay the bulk of the taxes. Between 1916 and 1933 the richest 1 per cent of the population has paid anywhere from 80 to 100 per cent of the income taxes, 92 per cent being the proportion paid in 1933. On this basis it is claimed that the "little fellow" bears an inadequate share of the tax burden. Although there may be good reasons for increasing the number of individuals who pay direct taxes, the receivers of small incomes already bear a heavier burden than appears on the surface because of the shifting which occurs in indirect taxation. Taxes on consumable goods have a pronounced tendency ultimately to fall most heavily on those least able to bear them. If the visible taxes on sales are added to the invisible ones embodied in higher selling prices, the individuals with small incomes will be found to be bearing not only heavy burdens of taxation, but also burdens which probably would be equivalent to a regressive rate of taxation on their incomes.

## II. GOVERNMENTAL RECEIPTS

The receipts by which governmental activities are financed fall broadly into revenues and borrowing. For some pur-

poses the distinction is not important, but for other purposes the difference is significant. Revenues create assets without any corresponding financial liability, whereas borrowing increases the government's liabilities at the same time that its assets are increased.

#### A. BORROWING

During the present century decided changes have occurred in the indebtedness of federal, state, and local governments. These are shown in Figure 79. It will be noted that the total indebtedness of all governmental units in the United States increased from less than five billion dollars in 1900 to over fifty billion in 1935. The first notable increase occurred with the World War and the second during the depression following 1929.

Different tendencies are found between federal borrowing on the one hand and that of state and local agencies on the other. Even before the World War, state and local borrowing had been increasing, although no appreciable change occurred for the Federal Government. By the time the conflict was over, federal indebtedness had increased greatly, and had reached the highest level it had ever attained up to that time. State and local borrowing were only slightly more than before the war. - Immediately following the conflict, federal indebtedness declined, although this decline was

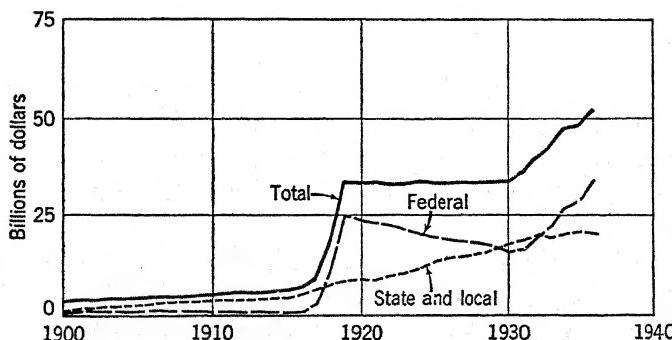


FIGURE 79. DEBTS OF FEDERAL, STATE, AND LOCAL GOVERNMENTS

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offset by increased borrowing of state and local agencies, so that for about ten years total obligations remained at approximately thirty-three billion dollars. As a result of the economic collapse following 1929, federal borrowing increased rapidly, accompanied by a declining rate of growth in the case of state and local indebtedness.

Unbalanced budgets, made possible by increased borrowing, have given rise to considerable alarm. Without passing upon the wisdom or folly of financing governmental activities through borrowed funds, it may be stated that there are two points which should be kept in mind. One is that the wisdom of borrowing is influenced by the purpose for which the debts are created. Peace-time emergencies, as well as war-time emergencies, may justify unbalanced budgets. The second point is that the usual analogy between governmental and private borrowing with respect to the danger of insolvency is not applicable. There are dangers in both cases, but danger of insolvency does not exist with governments as with private enterprises. When individuals and business enterprises borrow, they must be prepared to meet their obligations with income received in the course of trade, or else face bankruptcy. Private creditors, however, cannot throw governmental agencies into bankruptcy, and the taxing power gives these agencies more control over their incomes than is possessed by private borrowers.

#### B. REVENUES

Although borrowing is used in varying degrees to finance governmental operations, the payment of interest and the repayment of principal must ultimately be met by revenues. From this same source come most of the funds with which the governments conduct their activities.

*Taxes.* The bulk of the revenue is generally furnished by taxation. This is shown in the upper diagram of Figure 80, which pertains to the period since 1900. From about \$1,300,000,000 at the beginning of the century, tax collection increased to about \$10,000,000,000 by 1920 and has since

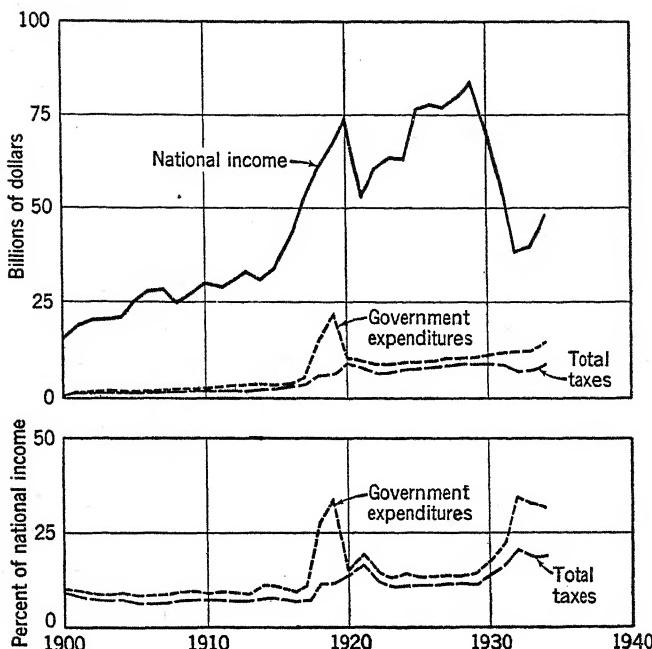


FIGURE 8O. TAXES, GOVERNMENT EXPENDITURES, AND NATIONAL INCOME  
Reprinted from National City Bank of New York Bulletin.

fluctuated between eight and ten billions, being nearly \$10,000,000,000 in 1934. Except in the periods of the World War and the depression following 1929, there has been no wide gap between taxes and expenditures. Only during the depression did taxes actually decline in the face of increasing governmental expenditures.

When viewed in relation to the national income, even the reduced tax collections following 1929 constituted a heavier burden than in previous years. As indicated in the lower diagram of Figure 8o, taxes had not absorbed more than about 8 per cent of the national income until the World War, when the burden finally increased to about 17 per cent. In the post-war period the burden declined to about 10 per cent, but with the sharp decline in income following 1929 the tax burden increased to about 20 per cent in 1935.

Particular taxes differ in kind and importance for federal, state, and local governments. Federal operations are financed mainly through customs duties, excise levies, and income taxes. Indeed, this is the order in which they came into use. Customs duties on imported merchandise furnished nearly all the tax revenue until the War between the States, when taxes on internal revenue in the form of excise levies came to be a permanent part of the tax structure. Customs and excises together contributed about 90 per cent of the revenue from taxes until the World War, when income taxes were added, with corporate income taxes leading and followed by personal taxes after the passage of the Sixteenth Amendment. Income taxes increased rapidly in importance and were the chief sources of revenue until the depression following 1929, when they declined sharply, as shown in Figure 81. Whereas corporate and personal incomes supplied 60 per cent of the federal revenue in 1930, these sources furnished only 29 per

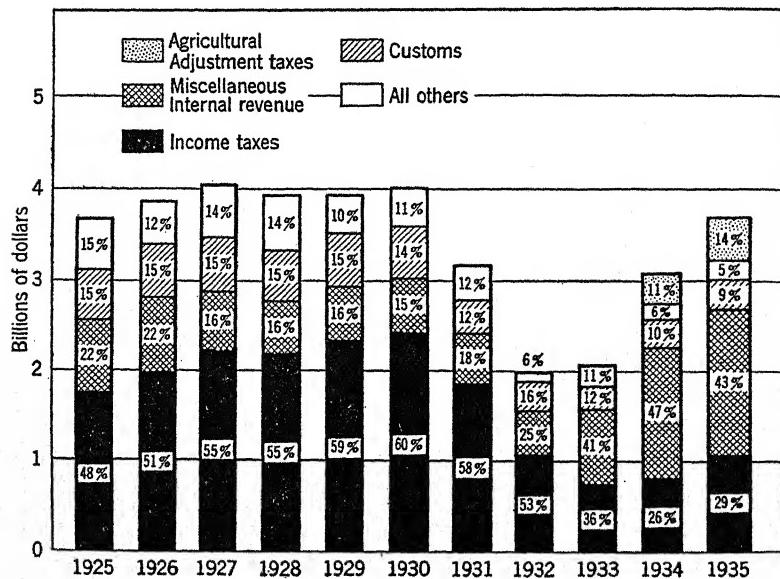


FIGURE 81. SOURCES OF FEDERAL GOVERNMENT RECEIPTS  
From *Annual Report*, Secretary of the Treasury.

cent in 1935. During the same period, the various other internal revenue levies increased from 15 to 43 per cent. During 1934-35, agricultural adjustment taxes were levied, but these were declared unconstitutional and now have only historical importance.

The structure of taxation employed by the state governments is worthy of notice. Whereas income taxes are ordinarily the chief pillar of the federal structure, general property taxes furnish most of the state revenues. Personal incomes are also taxed by some states, and were so taxed before the Federal Government levied taxes upon them, but the states have not developed this source of revenue so extensively as the Federal Government has done. States also levy on corporate incomes and impose excise taxes, but obstacles to these are encountered in that they may drive business into other states where lower, or even no, levies of this kind exist. Following 1930 there developed extensive use of sales taxes. Estate, inheritance, and gift taxes have likewise come into greater use among the states.

Local governments have more restricted sources of tax revenue at their disposal. Their tax revenues are derived almost entirely from property, particularly from real estate. In addition, occupational and poll taxes are frequently used.

*Other Revenues.* Although taxes furnish the bulk of revenue for all governmental agencies, there are other sources, including fees, service rates, special assessments, and miscellaneous sources. Fees are usually imposed in connection with certain privileges which the government is in a position to grant. In some cases the levy is intended primarily for regulation, as is the case with marriage and hunting license fees. In other instances, the levy furnishes appreciable revenues; for example, the fees for incorporation and for automobile licenses. These fees are compulsory levies only to those who desire the benefit of certain privileges. Service rates are in reality prices charged by the government for rendering services of a business character. Thus the Federal Government charges specified rates for postal service; state governments may con-

struct bridges and charge tolls for their use; local governments own and operate electric plants and transit facilities, charging the public specified rates for service. Special assessments are sometimes levied on a basis of the cost involved in producing special benefits. An instance of this occurs when local governments pave certain streets and distribute at least a part of the cost among the owners of land along the street. The cost of laying sewers may be similarly distributed. Finally, there are miscellaneous sources. These include fines, gifts, forfeitures, interest on investments, and sometimes profits. Ordinarily none of these miscellaneous sources furnish any appreciable part of the revenue required for general operation. Some communities, however, derive sufficient profits from their operation of utilities to obviate the necessity for taxes to finance the activities of local government.

### III. GOVERNMENTAL EXPENDITURES

The funds to finance the activities of government come from a jumbled assortment of taxes, fees, rates, special assessments and loans. The expenditures of federal, state, and local governments differ in both amount and direction.

#### A. AMOUNT OF EXPENDITURE

Governmental expenditures have shown a persistent tendency to increase during the present century. This is indicated in the upper diagram of Figure 80. From about \$1,500,000,000 in 1900 the expenditures increased to about \$15,000,000,000 in 1934. The World War period, when they rose to nearly \$25,000,000,000, may be disregarded, since much of the war increase is accounted for by a rising price level, and the higher price level, even after the war, accounts for some of the larger expenditures than those before the conflict. Even with allowance for changes in price level, governmental outlays have tended to increase. The National Industrial Conference Board estimates that in terms of 1913 dollars the expenditures rose from \$2,900,000,000 in 1913 to \$7,800,000,000 in 1924 and to \$9,400,000,000 in 1929.

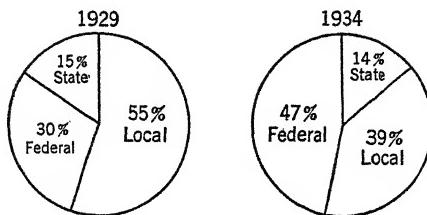


FIGURE 82. DISTRIBUTION OF GOVERNMENTAL EXPENDITURES BY FEDERAL, STATE, AND LOCAL AGENCIES, 1929 AND 1934

More significant, perhaps, than the actual amount of the expenditure is its relation to the national income. From the lower diagram of Figure 80, it will be noted that governmental agencies had come to disburse about 15 per cent of the national income, except in periods of emergency. Two distinct increases, resulting from war in one case and from the depression in the other, carried these expenditures up to about 35 per cent of the nation's income.

The division of expenditures among federal, state, and local governments has been distinctly unequal. The general tendency has been for local governments to make the bulk of the expenditures, followed in order by federal and state agencies. In 1929 the respective shares were 55, 30, and 15 per cent, as indicated in Figure 82. By 1934 the general tendency had been modified under the influence of depression to the extent that the Federal Government took the lead and accounted for 47 per cent of the expenditures, with local agencies declining in relative importance to 39 per cent and state expenditures remaining substantially unchanged in relative amount.

#### B. CHANNELS OF EXPENDITURE

In a broad sense, it might be said that the functions performed by federal, state, and local bodies are substantially the same, with differences in the financial emphasis placed on certain types of activities. The differences in emphasis, however, are so great that for most purposes the expenditures may be viewed as representing fairly distinctive functions.

*Federal Expenditures.* National calamities dominate federal spending. The inability of men to live peaceably together is responsible for a heavy drain on the national income. Preparation for future wars ordinarily accounts for about 35 or 40 per cent of the federal expenditures. But this is not an adequate measure of the burden of war. Conflicts are financed largely by borrowing, and these debts call for repayment sooner or later. Most of the indebtedness existing in 1930 was occasioned by war, and the repayments in that year accounted for 18 per cent of the expenditures, while payments of interest required an additional 16 per cent. Then, too, there were expenditures for hospital care and bonus payments to veterans, and, in the course of time, veterans will likely demand pensions for themselves and their widows as they did after the War between the States. Probably around 80 per cent of the federal expenditures ordinarily are required to finance obligations of past and to prepare for future wars.

The financial obligations arising out of a major conflict are much greater than is generally realized. The money claims on the Federal Government for the World War alone, to say nothing of other conflicts, had amounted to nearly \$42,000,000,000 by 1934, or an amount sufficient to operate for over fifty years, on the basis of their 1929 costs, the legislative branch of the government and the executive departments of State, Treasury, Justice, Interior, Agriculture, Commerce, and Labor. If expenditures for hospital care and for payments of bonuses to World War veterans are considered alone, they have amounted to more than the entire federal expenditures in 1935.

Although the yearly burden of national defense is considerable, its exact extent is impossible to determine, since the expenditures are not always made openly for this purpose. Subsidies to shipping and aircraft companies are usually intended in part to increase the potential facilities for war. To this end ships are often constructed in such a manner that with comparative ease they can be converted from commercial vessels into men-of-war. If only those funds openly

labeled for national defense are considered, they amounted to about \$500,000,000 in 1935, and budget estimates provide for an increase to nearly \$1,000,000,000 in 1937.

Economic depressions do not ordinarily give rise to appreciable increases in federal expenditures, but the depression after 1929 is an outstanding exception. How great this burden was is difficult to determine. Even if all the increase in yearly expenditures immediately following 1929 were attributed to this peace-time disaster, its cost would be underestimated, since ordinary activities in many instances were curtailed or eliminated. Through regular departments of the government and through corporations which it created, loans were made to assist banks, railroads, farmers, and home-owners; subsidies were granted to peg agricultural prices and foreign exchange rates, to finance public works, to maintain a Civilian Conservation Corps, to carry out resettlement projects, and for direct relief to unemployed. If those expenditures alone which the government classifies as being of an emergency nature are considered, they increased from 15 per cent of the federal expenditures in 1931 to 58 per cent in 1935, as indicated by the cross-hatched sections in Figure 83.

During the depression years, floods, droughts, and hurricanes added to the disasters requiring emergency expenditures. These amounts are included in the above figures. The immediate expenditures for relief are small in relation to the probable future expenditures to control rushing water, land erosion, and dust storms in order to prevent recurrence of these disasters. But it must be remembered that most of the need for such expenditures arises out of the reckless destruction of forests and the improper use of land. Consequently, in the main, these outlays must be included among those which are preventable in nature, although now imperative for national welfare.

When the distinctly civilian expenditures are considered, they require a negligible portion of the national income, even though they customarily account for an appreciable part of the total expenditures. Included in the government's classi-

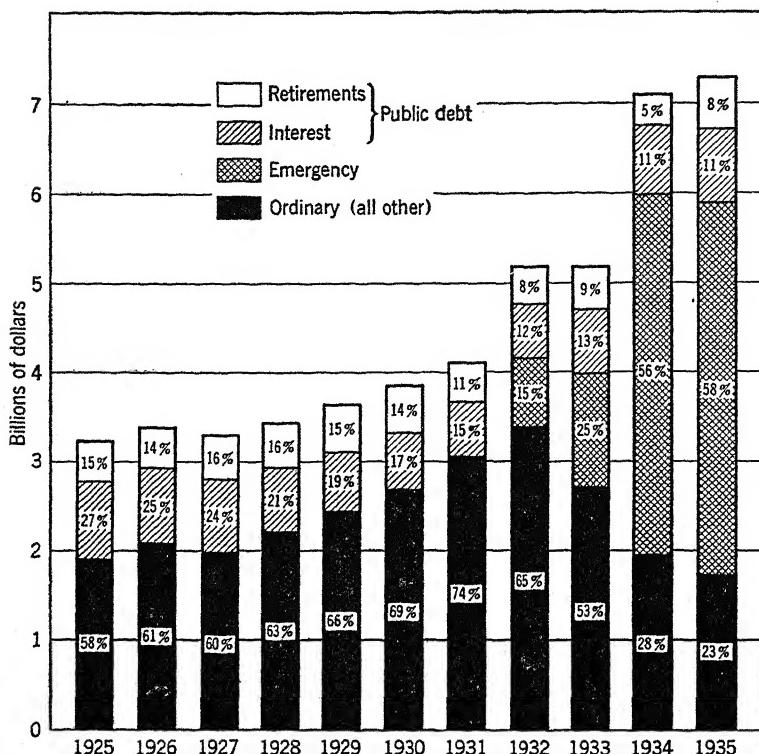


FIGURE 83. CHANNELS OF FEDERAL GOVERNMENT EXPENDITURES

From *Annual Report*, Secretary of the Treasury.

fication of ordinary expenditures, as shown in the lower blocks of Figure 80, are the current appropriations for maintaining the military forces. Even with these included, the amounts have been only about \$2,000,000,000 except for the five years beginning in 1929 when emergency expenditures were in reality included. In 1935 all ordinary expenditures were lower than during the preceding ten years. If army and navy spending is excluded, the civilian expenditures, including the post office deficit, amounted to only \$500,000,000, or about 1 per cent of the national income. In 1937 it is expected that the expenditures will be doubled, due largely to the increased outlays for public works.

*State Expenditures.* In contrast to the heavy expenditures of the Federal Government for purposes arising out of disasters, particularly past and prospective wars, state expenditures are largely for purposes more directly related to the immediate welfare of its citizens. This is not surprising, since the states share virtually none of the cost of national defense. With these responsibilities removed from their shoulders, the states are in a position to center their activities on the internal affairs more intimately related to the day-to-day life of their people.

Chief among state expenditures is the construction, maintenance, and operation of highways. This single item accounted for 33 per cent of their expenditures in 1929. Next in order came education at 27 per cent. For these purposes the federal expenditures were about 2.5 and 0.4 per cent respectively. Social welfare activities also claimed a larger portion of state than of federal expenditures with respective shares of 13 and 2 per cent. On the other hand, state agencies expended relatively less than the Federal Government in financing debts and for general governmental activities. Debt redemption and interest combined accounted for about 7 per cent and general activities 6 per cent in the state expenditures, as compared with 35 and 11 per cent, respectively, on the part of the Federal Government.

For a decade or more prior to the recent depression years, no substantial changes occurred in the types of services performed by the states, but changes did occur in the emphasis placed upon various activities. Relatively larger expenditures were made for highways and waterways, for conservation and development of natural resources, and for recreation. Of these, highway construction grew most rapidly, and displaced education as the leading purpose for expenditure. Along with education relatively less expenditure was made for institutional care, such as furnished by hospitals or homes for the poor, aged, and defective. Activities relating to health and sanitation, while increasing in actual amount, retained about the same relative importance.

At various points state and federal activities meet on common ground. This is notably the case for highways and waterways, education, health, conservation of resources, and, more recently, unemployment relief. In numerous instances federal subsidies match state expenditures for such purposes, so that the amount actually recorded as expenditures by states is in excess of the funds furnished by the states.

*Local Expenditures.* The subdivisions of states, consisting of counties, townships, cities, boroughs, and incorporated villages, constitute a complex network of governmental agencies for which adequate information as to the cost of government is lacking, except in the case of cities. The available information indicates that local governments spend their funds for substantially the same purposes as do the states, but with different emphasis.

On the part of local governments, expenditures for education are distinctly in the lead, followed by construction and the maintenance of highways. In 1929, these items accounted for 27 and 16 per cent, respectively, in comparison with 27 and 35 per cent for the states. The need for fire and police protection, as well as the pressure for greater social welfare, causes the proportion spent in these directions to be larger for cities than for states. Since local activities involve considerable expenditure for permanent improvements, such as school buildings, highways, and parks, it is not surprising that the immediate financing has been largely through borrowing, with amortization of the debts over a period of time. Although local debts are not known with any accuracy, it is estimated that local interest obligations are about 10 per cent of the expenditures, in comparison with 5 per cent on the part of state agencies.

To some extent local expenditures, like those of states, are subsidized. Not infrequently towns receive financial assistance from the state and county for the construction and maintenance of those streets which are the local sections of a main highway. Similarly, states subsidize local agencies in financing education.

In view of the general nature of local and also of state ex-

penditures, their tendency to increase is not surprising. An increasing population seeking higher standards of living finds that governmental agencies can perform certain services which would otherwise not be performed, or can perform them better than would otherwise be possible. Detroit furnishes an illustration of the expansion in the activities of local government. Fully half a century after the establishment of this city, community collection and disposal of garbage was inaugurated; by 1895 street cleaning began, playgrounds were established in 1904, evening schools in 1905, comfort stations and branch libraries in 1906, public health and nursing in 1908, traffic control in 1909, technical high schools in 1912, junior colleges in 1917, water filtration in 1923, mosquito control in 1925, a scientific police laboratory in 1927, an airport in 1929, and municipal lodging-houses in 1930.

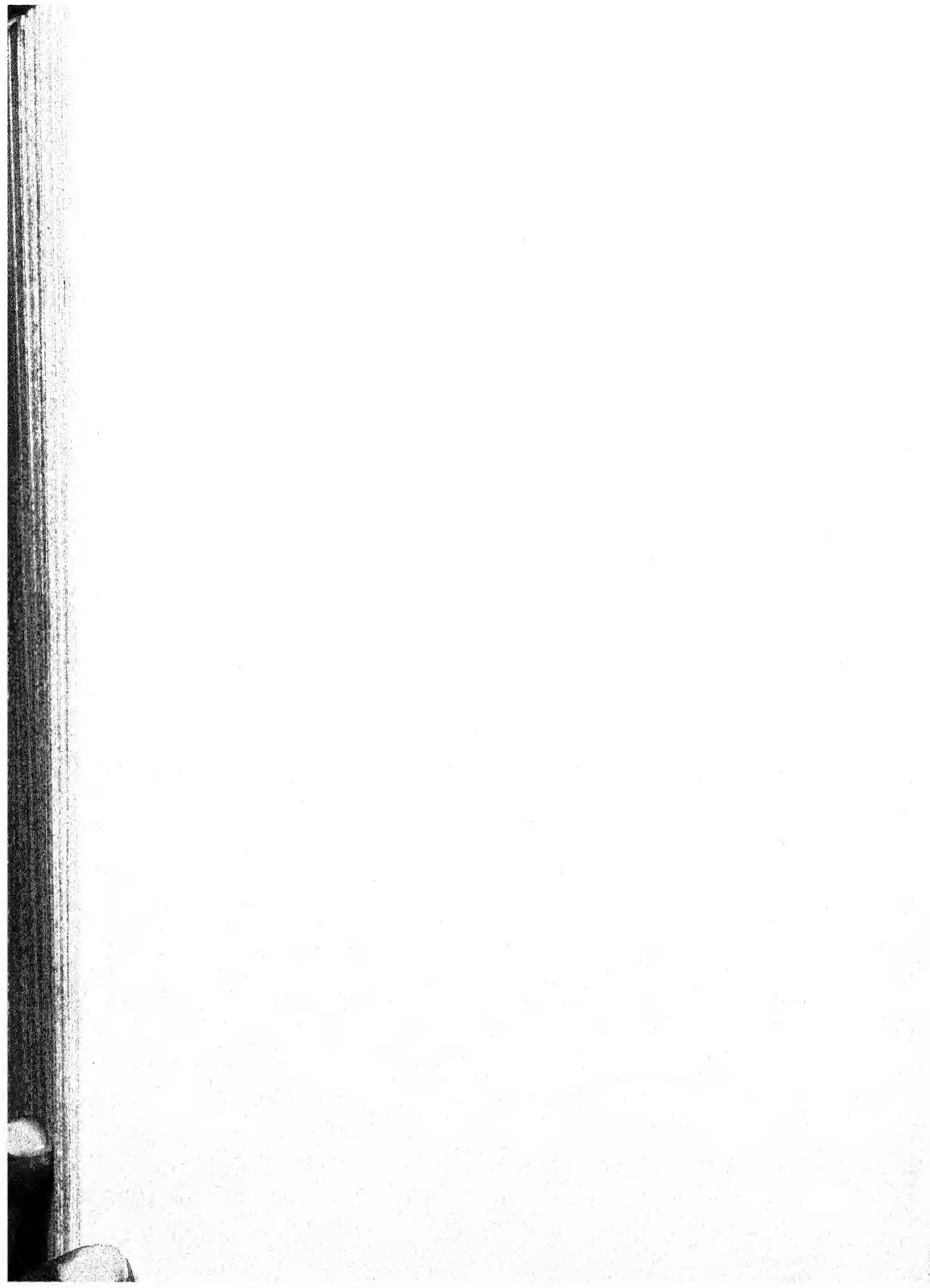
Whatever the future course of taxation and governmental expenditure may be, the broad guiding principle for wise decisions is fairly clear. First, activities which are socially beneficial and which can be performed, either only by governmental agencies or most satisfactorily by them, constitute their logical functions and give rise to justifiable expenditure of public funds. When children lived in the midst of open fields over which they could frolic and roam, and when streams furnished swimming in summer and skating in winter, there was no need for any governmental agency to provide parks and playgrounds; but with as many people in a single apartment house as live in many villages and towns, the need for such facilities increases. When man worked from dawn till dusk six days in the week and drove to church, funerals, and festivals by horse and buggy, there was no need for wide, hard, and smooth roads with signs indicating distances, crossroads, and dangerous curves. As conditions of life change, new ways are likely to be required for meeting not only new needs but old ones as well. A second guiding principle is that in financing these activities the aggregate burden of taxation should be no greater than that required for the efficient performance of the activities. This means that governmental activities

must be in the hands of persons trained for the work they are responsible for, and not in the hands of those persons whose main, if not only, qualification is that they have served the particular political party which happens to be in power at the time. The fact that these principles are often disregarded makes them no less essential as guides in deciding how far governmental activities should be carried and how much taxation is justified in financing them.

### QUESTIONS

1. "Taxation with a double purpose may encounter difficulty." (a) What is meant by double purpose taxation? (b) How may such taxation encounter difficulty?
2. What limitations are encountered in taxing according to benefits received?
3. Can it be said that according to ability to pay, income furnishes a satisfactory basis for taxation?
4. "Whether or not ownership of property constitutes a satisfactory base for taxation depends largely on the purpose of the tax and the theory on which it is levied." Explain.
5. "Transactions, activities, and practices are more satisfactory bases for Federal than for state taxation." Evaluate this statement.
6. "Whatever serves as a basis for taxation must be capable of being measured in some way." What does this statement mean and in what ways may measurement occur?
7. "Satisfactory valuation of real and personal property for purposes of taxation is virtually impossible." Explain.
8. Why are progressive rates of taxation particularly well suited for regulatory taxes?
9. "The rate of taxation is not a reliable indication of the tax burden." Explain.
10. Why are regressive tax rates seldom used for purposes of obtaining revenue?
11. Distinguish between direct and indirect taxes.
12. What determines whether or not a tax is shifted?
13. By what line of reasoning is the conclusion reached that general income taxes cannot be shifted? Does this conclusion apply to both personal and corporation income taxes?
14. What reason is there to believe that a tax on the rent of land cannot be shifted, whereas a tax on the income from rental of factory buildings can be shifted?

15. "Comparatively few people pay the bulk of the taxes." Evaluate this statement.
16. "As between federal, state, and local government, different tendencies are found with respect to borrowing." Explain.
17. Point out how the kind of taxes and their importance differs as between federal, state, and local governments.
18. "There is no valid reason why state expenditures should be so large in relation to federal and local expenditures." Do you agree? Give reasons and point out the relative size of the expenditures.
19. "National calamities dominate federal spending." Explain.
20. "Whatever the future course of taxation and governmental expenditures may be, the broad guiding principles for wise decisions are fairly clear." (a) What do you expect the future course of taxation and expenditures to be? (b) What are the principles referred to above?



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